



*Ninja*

**ZX-11**

**Motorcycle Owner's Manual**



Whenever you see the symbols shown below, heed their instructions! Always follow safe operating and maintenance practices.

**⚠ WARNING**

This warning symbol identifies special instructions or procedures which, if not correctly followed, could result in personal injury, or loss of life.

**⚠ CAUTION**

This caution symbol identifies special instructions or procedures which, if not strictly observed, could result in damage to or destruction of equipment.

**NOTE**

○ *This note symbol indicates points of particular interest for more efficient and convenient operation.*

**NOTICE**

THIS PRODUCT HAS BEEN MANUFACTURED FOR USE IN A REASONABLE AND PRUDENT MANNER BY A QUALIFIED OPERATOR AND AS A VEHICLE ONLY.

## EMISSION CONTROL INFORMATION

To protect the environment in which we all live, Kawasaki has incorporated crankcase emission (1) and exhaust emission (2) control systems in compliance with applicable regulations of the United States Environmental Protection Agency and California Air Resources Board. Additionally, Kawasaki has incorporated an evaporative emission control system (3) in compliance with applicable regulations of the California Air Resources Board on vehicle sold in California only.

### **1. Crankcase Emission Control System**

This system eliminates the release of crankcase vapors into the atmosphere. Instead, the vapors are routed through an oil separator to the intake side of the engine. While the engine is operating, the vapors are drawn into the combustion chamber, where they are burned along with the fuel and air supplied by the carburetors.

### **2. Exhaust Emission Control System**

This system reduces the amount of pollutants discharged into the atmosphere by the exhaust of this motorcycle. The fuel and ignition systems of this motorcycle have been carefully designed and constructed to ensure an efficient engine with low exhaust pollutant levels.

### 3. Evaporative Emission Control System

Vapors caused by fuel evaporation in the fuel system are not vented into the atmosphere. Instead, fuel vapors are routed into the running engine to be burned, or stored in a canister when the engine is stopped. Liquid fuel is caught by a vapor separator and returned to the fuel tank.

### High Altitude Performance Adjustment Information

To improve the EMISSION CONTROL PERFORMANCE of vehicles operated above 4,000 feet, Kawasaki recommends the following Environmental Protection Agency (EPA) approved modification.

#### NOTE

- *When properly performed, these specified modifications only are not considered to be emissions system "tampering" and vehicle performance is generally unchanged as a result.*

#### Installation Instructions:

High altitude adjustment requires replacement of certain carburetor components. Installation of these optional parts may be performed by an authorized Kawasaki dealer, or the consumer, following repair recommendations specified in the appropriate Kawasaki Service Manual.

## MAINTENANCE AND WARRANTY

Proper maintenance is necessary to ensure that your motorcycle will continue to have low emission levels. This Owner's Manual contains those maintenance recommendations for your motorcycle. Those items identified by the Periodic Maintenance Chart are necessary to ensure compliance with the applicable standards.

As the owner of this motorcycle, you have the responsibility to make sure that the recommended maintenance is carried out according to the instructions in this Owner's Manual at your own expense.

The Kawasaki Limited Emission Control System Warranty requires that you return your motorcycle to an authorized Kawasaki dealer for remedy under warranty. Please read the warranty carefully, and keep it valid by complying with the owner's obligations it contains.

You should keep a maintenance record for your motorcycle. To assist you in keeping this record, we have provided space on pages **131** through **134** of this manual where an authorized Kawasaki dealer, or someone equally competent, can record the maintenance. You should also retain copies of maintenance work orders, bills, etc., as verification of this maintenance.

## **TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED:**

Federal law prohibits the following acts or the causing thereof: (1) the removal or rendering inoperative by any person other than for purposes of maintenance, repair, or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below:

- \* Replacement of the original exhaust system or muffler with a component not in compliance with Federal regulations.
- \* Removal of the muffler(s) or any internal portion of the muffler(s).
- \* Removal of the air box or air box cover.
- \* Modifications to the muffler(s) or air intake system by cutting, drilling, or other means if such modifications result in increased noise levels.



This warning may apply to any of the following components or any assembly containing one or more of these components:-

Brake Shoes or Pads  
Clutch Friction Material  
Gaskets  
Insulators

#### SAFETY INSTRUCTIONS

- Operate if possible out of doors or in a well ventilated place.
- Preferably use hand tools or low speed tools equipped, if necessary, with an appropriate dust extraction facility. If high speed tools are used, they should always be so equipped.
- If possible, dampen before cutting or drilling.
- Dampen dust and place it in properly closed receptacle and dispose of it safely.



## FOREWORD

We wish to thank you for choosing this fine Kawasaki Motorcycle. Your new motorcycle is the product of Kawasaki's advanced engineering, exhaustive testing, and continuous striving for superior reliability, safety, and performance.

Read this Owner's Manual before riding so you will be thoroughly familiar with the proper operation of your motorcycle's controls, its features, capabilities and limitations. This manual offers many safe riding tips, but its purpose is not to provide instruction in all the techniques and skills required to ride a motorcycle safely. Kawasaki strongly recommends that all operators of this vehicle enroll in a motorcycle rider training program to attain awareness of the mental and physical requirements necessary for safe motorcycle operation.

To ensure a long, trouble-free life for your motorcycle, give it the proper care and maintenance described in this manual. For those who would like more detailed information on their Kawasaki Motorcycle, a Service Manual is available for purchase from any Kawasaki dealer. The Service Manual contains detailed disassembly and maintenance information.

Due to improvements in design and performance during production, in some cases there may be minor discrepancies between the actual vehicle and the illustrations and text in this manual.

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Spark Plugs

NGK C9E or ND U27ES-N

Lubrication System

<C> NGK CR9E or ND U27ESR-N

Engine Oil

Forced Lubrication (wet sump)

Engine Oil Capacity

SE or SF class SAE 10W40, 10W50, 20W40, or 20W50

Coolant Capacity

3.5 L (3.7 US qt)

2.5 L (2.6 US qt)

## **TRANSMISSION**

Transmission Type

6-speed, constant mesh, return shift

Clutch Type

Wet, multi disc

Driving System

Chain drive

Primary Reduction Ratio

1.637 (95/58)

Final Reduction Ratio

2.647 (45/17)

Overall Drive Ratio

4.490 (Top gear)

Gear Ratio: 1st

2.800 (42/15)

2nd

2.000 (38/19)

3rd

1.590 (35/22)

4th

1.333 (32/24)

5th

1.153 (30/26)

6th

1.035 (29/28)

## FRAME

Castor	26°
Trail	103 mm (4.06 in.)
Tire Size:	
Front	120/70VR17-V290 or 120/70ZR17 Tubeless
Rear	170/60VR17-V290 or 170/60ZR17 Tubeless
Fuel Tank Capacity	21 L (5.5 US gal)

## ELECTRICAL EQUIPMENT

Battery	12 V 14 Ah
Headlight	12 V 60/55 W
Tail/Brake Light	12 V 8/27 W x 2

<C> : Canadian model

<Cal> : California model

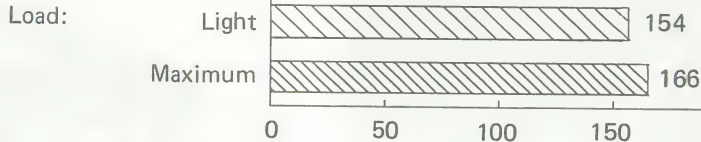
Specifications subject to change without notice.

## Vehicle Minimum Stopping Distance on Dry Pavement

These figures indicate braking performance that can be met or exceeded by the vehicle to which they apply, without locking the wheels, under different conditions of loading. The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

Description of vehicle to which this table applies: Model ZX1100-C2

### A. Fully Operational Service Brake



Stopping distance in feet from 60 mph.

Manufacturer: **Kawasaki Heavy Industries, Ltd.**

## »»»»»»»»»»»»»»»»»»»»»»»» SERIAL NUMBER LOCATIONS ««««««««««««««««««««««««

The engine and frame serial numbers are used to register the motorcycle. They are the only means of identifying your particular machine from others of the same model type. These serial numbers may be needed by your dealer when ordering parts. In the event of theft, the investigating authorities will require both numbers as well as the model type and any peculiar features of your machine that can help them identify it.

Frame No.



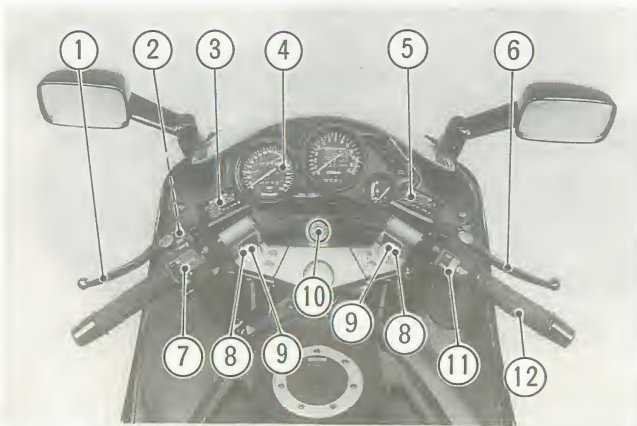
A. Frame Number

Engine No.



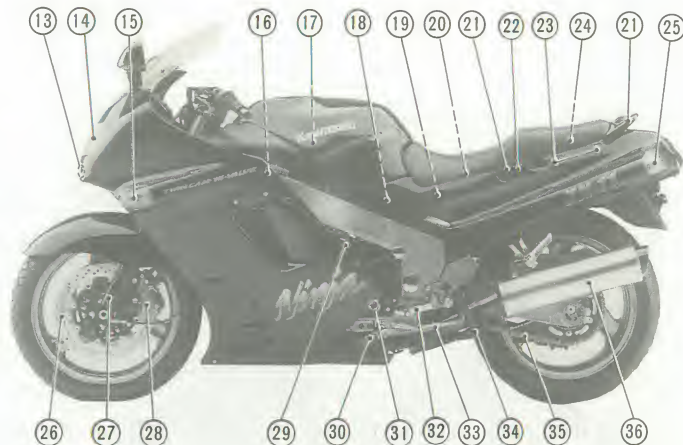
A. Engine Number

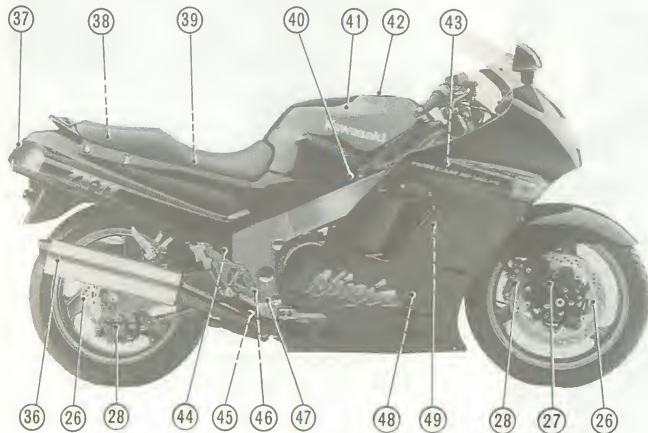




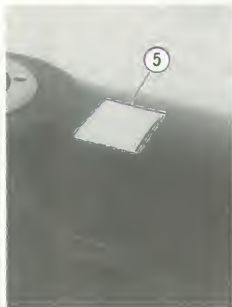
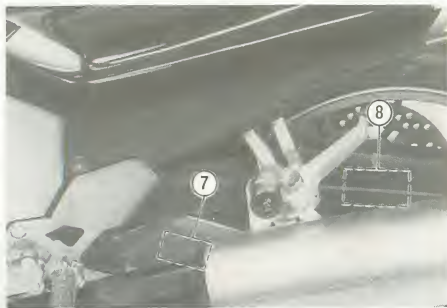
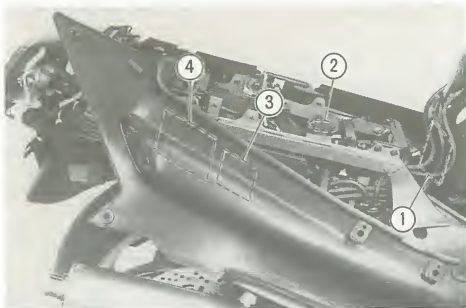
1. Clutch Lever
2. Starter Lockout Switch
3. Clutch Fluid Reservoir
4. Meter Instruments
5. Brake Fluid Reservoir  
(Front)
6. Front Brake Lever
7. Left Handlebar Switches
8. Spring Preload Adjuster
9. Rebound Damping Force  
Adjuster
10. Ignition Switch/Steering  
Lock
11. Right Handlebar Switches
12. Throttle Grip

13. Air Intake
14. Headlight
15. Turn Signal/Running Position Light
16. Spark Plugs
17. Air Cleaner
18. Fuel Tap
19. Battery
20. Junction Box (Fuses)
21. Grab Rail
22. Seat Lock
23. Tying Hooks
24. Helmet Hooks
25. Turn Signal Light
26. Brake Disc
27. Front Fork
28. Brake Caliper
29. Idle Adjusting Screw
30. Side Stand Switch
31. Oil Level Gauge
32. Shift Pedal
33. Side Stand
34. Center Stand
35. Drive Chain
36. Muffler





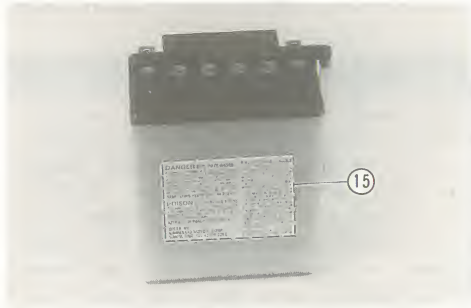
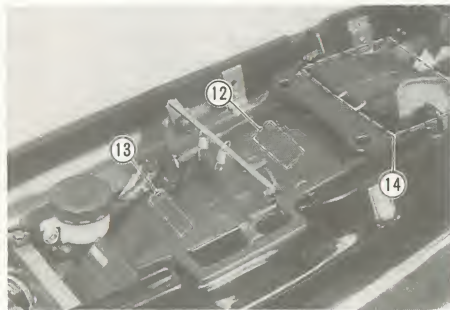
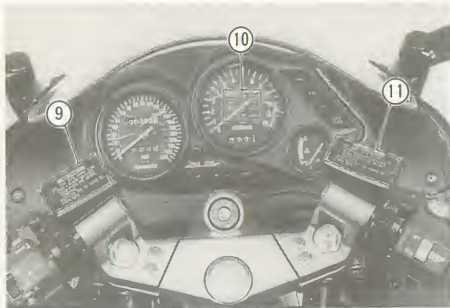
- 37. Tail/Brake Light
- 38. Document/Tool Kit Compartment
- 39. Brake Fluid Reservoir (Rear)
- 40. Carburetors
- 41. Fuel Tank
- 42. Fuel Tank Cap
- 43. Coolant Reserve Tank
- 44. Rear Brake Light Switch
- 45. Rebound Damping Force Adjuster
- 46. Rear Shock Absorber
- 47. Rear Brake Pedal
- 48. Oil Cooler
- 49. Radiator



- \*1. Daily Safety Checks
- 2. Brake Fluid (Rear)
- \*3. Vacuum Hose Routing Diagram
- 4. Battery Vent Hose
- \*\*5. Fuel Level
- \*6. Noise Emission Control Information
- 7. Tire and Load Data
- 8. Important Drive Chain Information

\* : only on US model

\*\* : only on California model



- 9. Clutch Fluid
- \*10. Brake-In Caution
- 11. Brake Fluid (Front)
- \*12. Vehicle Emission Control Information
- 13. Engine Oil and Oil Filter
- \*\*\*14. Daily Safety Checks
- 15. Battery Poison/Danger

\* : only on US model  
 \*\*\* : only on Canadian model



1. Any passenger should be thoroughly familiar with motorcycle operation. The passenger can affect control of the motorcycle by improper positioning during cornering and sudden movements. It is important that the passenger sit still while the motorcycle is in motion and not interfere with the operation of the motorcycle. Do not carry animals on your motorcycle.
2. You should instruct any passenger before riding to keep his feet on the passenger footpegs and hold on to the operator, seat strap or grab rail. Do not carry a passenger unless he or she is tall enough to reach the footpegs and footpegs are provided.
3. All baggage should be carried as low as possible to reduce the effect on the motorcycle center of gravity. Baggage weight should also be distributed equally on both sides of the motorcycle. Avoid carrying baggage that extends beyond the rear of the motorcycle.
4. Baggage should be securely attached. Make sure that the baggage will not move around while you are riding. Recheck baggage security as often as possible (not while the motorcycle is in motion) and adjust as necessary.
5. Do not carry heavy or bulky items on a luggage rack. They are designed for light items, and overloading can affect handling due to changes in weight distribution and aerodynamic forces.
6. Do not install accessories or carry baggage that impairs the performance of the motorcycle. Make sure that you have not adversely affected any lighting components, road clearance, banking capability (i.e., lean angle), control operation, wheel travel, front fork movement, or any

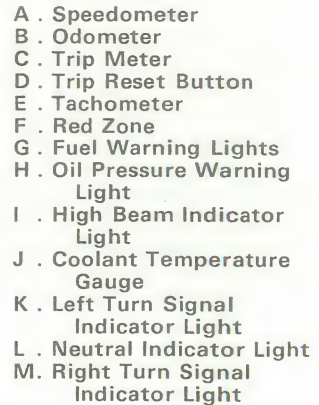


other aspect of the motorcycle's operation.

7. Weight attached to the handlebar or front fork will increase the mass of the steering assembly and can result in an unsafe riding condition.
8. Fairings, windshields, backrests, and other large items have the capability of adversely affecting stability and handling of the motorcycle, not only because of their weight, but also due to the aerodynamic forces acting on these surfaces while the motorcycle is in operation. Poorly designed or installed items can result in an unsafe riding condition.
9. This motorcycle was not intended to be equipped with a sidecar or to be used to tow any trailer or other vehicle. Kawasaki does not manufacture sidecars or trailers for motorcycles and cannot predict the effects of such accessories on handling or stability, but can only warn that the ef-

fects can be adverse and that Kawasaki cannot assume responsibility for the results of such unintended use of the motorcycle. Furthermore, any adverse effects on motorcycle components caused by the use of such accessories will not be remedied under warranty.





## Speedometer and Tachometer

The speedometer shows the speed of the vehicle. In the speedometer face are the odometer and trip meter. The odometer shows the total distance that the vehicle has been ridden. The trip meter shows the distance traveled since it was last reset to zero. The trip meter can be reset to zero by pushing the reset button.

The tachometer shows the engine speed in the revolutions per minute (r/min, rpm). On the right side of the tachometer face is a portion called the "red zone." Engine r/min (rpm) in the red zone is above maximum recommended engine speed and is also above the range for good performance.

In the tachometer face is the additional trip meter which can be reset to zero by turning the reset button clockwise.

### **⚠CAUTION**

**Engine r/min (rpm) should not be allowed to enter the red zone; operation in the red zone will overstress the engine and may cause serious engine damage.**

## Coolant Temperature Gauge

This gauge shows the temperature of coolant. Ordinarily, the needle should stay within the white zone. If the needle reaches the "H" line, stop the engine and check the coolant level in the reserve tank after the engine cools down.

### **⚠CAUTION**

**Do not let the engine continue running when the gauge needle reaches the "H" line. Prolonged engine operation will result in severe damage from overheating.**

## **Indicator Lights**

**FUEL:** The fuel warning lights flash on and off whenever the fuel in the fuel tank has decreased to 6.5 L (1.7 US gal) or less when riding or the ignition switch is in the ON position with the engine not running, and goes off when there is more than 6.5 L (1.7 US gal) of fuel in the tank.

If either light bulb has burnt out, the remaining one flashes on and off at more frequent interval.

**OIL:** The oil pressure warning light goes on whenever the oil pressure is dangerously low or the ignition switch is in the ON position with the engine not running, and goes off when the engine oil pressure is high enough. Refer to the Maintenance and Adjustment chapter for more detailed engine oil information.

**HIGH BEAM:** When the headlight is on high beam, the high beam indicator light is lit.

**NEUTRAL:** When the transmission is in neutral, the neutral indicator light is lit.

**TURN:** When the turn signal switch is turned to left or right, the corresponding turn signal indicator light flashes on and off.

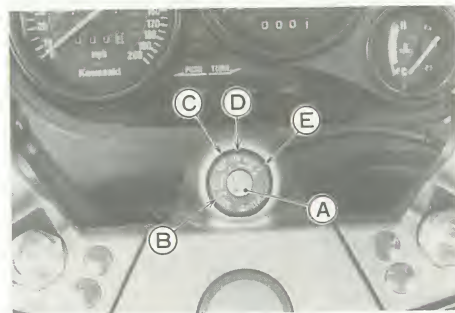
## Key

This motorcycle has a combination key, which is used for the ignition switch/ steering lock, seat lock, and fuel tank cap.

Blank keys are available at your Kawasaki dealers. Ask your dealer to make any additional spare keys you may need, using your original key as a master.

## Ignition Switch/Steering Lock

This is a four-position, key-operated switch. The key can be removed from the switch when it is in the OFF, LOCK, or P(PARK) position.



- A. Ignition Switch/Steering Lock
- B. LOCK position
- C. OFF position
- D. ON position
- E. P (Park) position

<b>OFF</b>	Engine off. All electrical circuits off.
<b>ON</b>	Engine on. All electrical equipment can be used.
<b>LOCK</b>	Steering locked. Engine off. All electrical circuits off
<b>P(Park)</b>	Steering locked. Engine off. Tail and license plate lights on. Turn signal circuit on. All other electrical circuits cut off.

### NOTE

○ *The tail, running position, and license plate lights are on whenever the ignition switch is in the ON position. The headlight goes on when the starter button is released after starting the engine. To avoid battery discharge, always start the engine immediately after turning the ignition switch to ON.*

○ *If you leave the PARK position on for a long time (one hour), the battery may become totally discharged.*

**To operate the ignition switch:**

**OFF**  **ON**  **P(Park)**



1. Turn the handlebar fully to the left.
2. a. For parking push down the key in the ON position and turn it to P (Park).

**LOCK** b. For locking push down the key in the OFF position and turn it to LOCK.

## Right Handlebar Switches

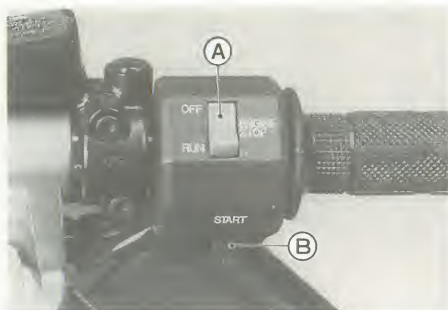
### Engine Stop Switch

In addition to the ignition switch, the engine stop switch must be in the RUN position for the motorcycle to operate.

The engine stop switch is for emergency use. If some emergency requires stopping the engine, move the engine stop switch to the OFF position.

### NOTE

○ *Although the engine stop switch stops the engine, it does not turn off all the electrical circuits. Ordinarily, the ignition switch should be used to stop the engine.*



A. Engine Stop Switch  
B. Starter Button

### Starter Button

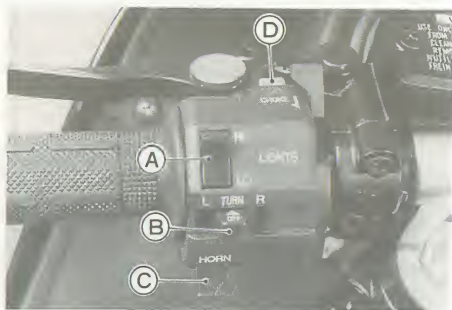
The starter button operates the electric starter when pushed with the clutch lever pulled in or the transmission in neutral.

Refer to the Starting the Engine section of the "How to Ride the Motorcycle" chapter for starting instructions.

## Left Handlebar Switches

### Dimmer Switch

High or low beam can be selected with the dimmer switch. When the headlight is on high beam (HI), the high beam indicator light is lit.



- A. Dimmer Switch
- B. Turn Signal Switch
- C. Horn Button
- D. Hazard Switch

### Turn Signal Switch

When the turn signal switch is turned to L (left) or R (right), the corresponding turn signals flash on and off.

To stop flashing, push the switch in.

### Horn Button

When the horn button is pushed, the horn sounds.

### Hazard Switch

If an emergency requires you to park on the highway shoulder, turn on the hazard lights to warn other drivers of your location.

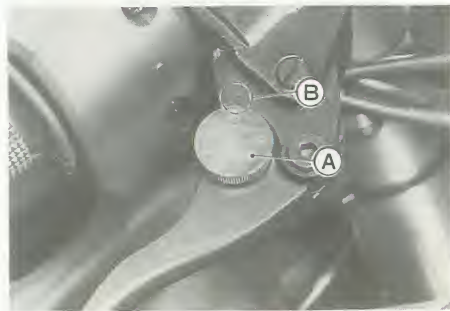
Push in the hazard switch with the ignition switch in the ON or PARK position. All the turn signals and turn signal indicator lights will flash on and off.

### ⚠CAUTION

If you leave the switch on for a long time, the battery may become totally discharged. So be careful not to use the hazard lights for more than 30 minutes.

### Brake/Clutch Lever Adjusters

There is an adjuster on both the brake and clutch levers. Each adjuster has 4 positions so that the released lever position can be adjusted to suit the operator's hands. Push the lever forward and turn the adjuster to align the number with the triangular mark on the lever holder. The distance from the grip to the released lever is minimum at Number 4 and maximum at Number 1.



A. Adjuster

B. Mark



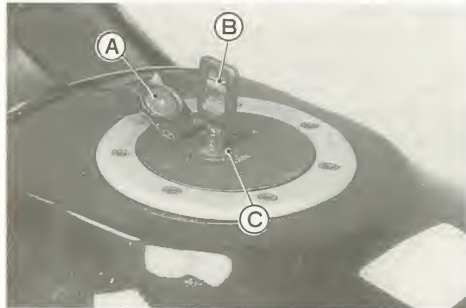
## Fuel Tank Cap

To open the fuel tank cap, pull up the key hole cover. Insert the ignition switch key into the lock and turn the key to the right.

To close the cap, push it down into place with the key inserted. The key can be removed by turning it counterclockwise to the original position.

### NOTE

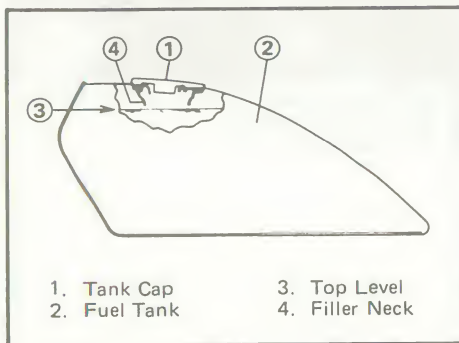
- *The tank cap cannot be closed without the key inserted, and the key cannot be removed unless the cap is locked properly.*
- *Do not push the cap down with the key, or the cap cannot be locked.*



A. Key Hole Cover  
B. Ignition Switch Key  
C. Fuel Tank Cap

## Fuel Tank

The following octane rating gasoline is recommended in the fuel tank. Avoid filling the tank in the rain or where heavy dust is blowing so that the fuel does not get contaminated.



## ⚠ WARNING

Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light. Never fill the tank so the fuel level rises into the filler neck. If the tank is overfilled, heat may cause the fuel to expand and overflow through the vents in the tank cap.

After refueling, make sure the tank cap is closed securely.

If gasoline is spilled on the fuel tank, wipe it off immediately.

## ⚠CAUTION

**California models only: Never fill the tank so the fuel level rises into the filler neck. If the tank is overfilled, heat may cause the fuel to expand and flow into the Evaporative Emission Control System resulting in hard starting and engine hesitation.**

### Fuel Requirement:

#### *Octane Rating*

The octane rating of a gasoline is a measure of its resistance to detonation or "knocking." Use a gasoline with an octane rating equal to or higher than that shown in the table below.

Octane Rating Method	Minimum Rating
Antiknock Index $\frac{(\text{RON} + \text{MON})}{2}$	87
Research Octane No. (RON)	91

The Antiknock Index is an average of the Research Octane Number (RON) and the Motor Octane Number (MON). The Antiknock Index is posted on service station pumps in the U.S.A. Research Octane Number is a commonly used term describing a gasoline's octane rating.

## NOTE

*○ If "knocking" or "pinging" occurs, use a different brand of gasoline or higher octane rating.*

### *Gasoline and Alcohol Blends*

Blends of gasoline and alcohol called "gasohol" can be used on an occasional basis, however continued use is not recommended. Switch back immediately to gasoline which does not contain alcohol if you experience any operating irregularities. Any deterioration of fuel system components or degradation of performance resulting from the use of gasohol will not be covered by

Kawasaki's Limited Warranty, Emissions Warranties, or Good Times Protection Plan. If you decide to use gasohol, be sure to follow these simple cautions:

### **⚠CAUTION**

**Never use gasohol with an octane rating lower than the minimum octane rating specified by Kawasaki for this product.**

**Never use gasohol containing more than 10% ethanol (grain alcohol).**

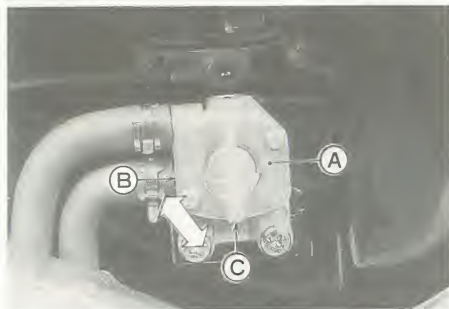
**Never use gasohol containing more than 5% methanol (wood alcohol). Gasoline containing methanol must also be blended with cosolvents and corrosion inhibitors.**

**Never use gasohol for extended periods and never store this product with gasohol in the fuel system.**

**Gasoline containing alcohol can cause paint damage. Be extra careful not to spill gasohol during refueling.**

### **Fuel Tap**

The fuel tap has two positions: OFF and ON. For normal operation turn the tap to the ON position.



**A. Fuel Tap**  
**B. OFF position**

**C. ON position**

With the fuel tap in the ON position fuel flows to carburetors only when the engine is started or is running, and fuel supply is shut off when the engine is stopped.

Turn the fuel tap to the OFF position when the fuel tank is removed for main-

tenance and adjustments or the motorcycle is stored for a long time.

## NOTE

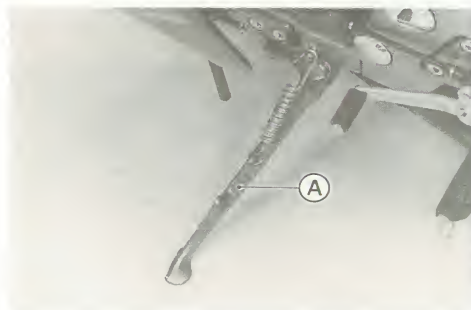
- *When the carburetor is completely empty, it takes about 30 second for the engine to start.*

## ⚠ CAUTION

Do not operate the starter continuously for more than 5 seconds or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each operation of the starter to let it cool and the battery power recover.

## Stands

The motorcycle is equipped with two stand: a center stand and a side stand.



A. Side Stand

## NOTE

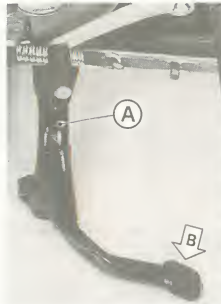
- *When using the side stand, turn the handlebar to the left.*

Whenever the side stand or center stand is used, make it a practice to kick the stand fully up before sitting on the motorcycle.

## **⚠ WARNING**

**Forgetting and leaving the side stand down and riding away could cause an accident.**

To set the motorcycle up on the center stand, step down firmly on the stand, and then lift the motorcycle up and to the rear using the grab rail as a handhold. Don't pull up on the seat to lift as this will damage the seat.



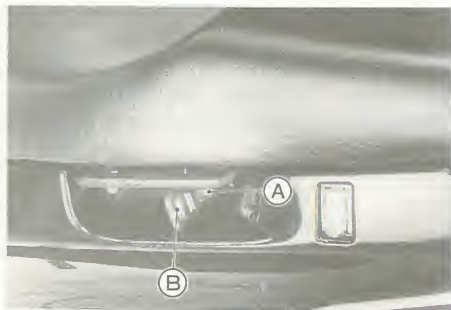
**A. Center Stand  
B. Step down.**



**C. Grab Rail  
D. Lift up.**

## Seat Lock

To remove the seat, inserting the ignition switch key into the seat lock, turning the key to the right, and pulling up on the rear of the seat. The seat is locked when pushed back into place.



A. Seat Lock      B. Ignition Switch Key

## Tying Hooks

When tying up light loads to the seat, pull up the tying hooks on the left and right side covers.



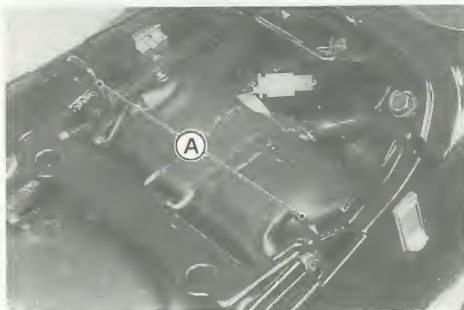
A. Tying Hooks

## Helmet Hooks

Helmets can be secured to the motorcycle using the helmet hooks located under the seat.

### **⚠ WARNING**

**Do not ride the motorcycle with helmets attached to the hooks. The helmets could cause an accident by distracting the operator or interfering with normal vehicle operation.**



**A. Helmet Hooks**

## Document/

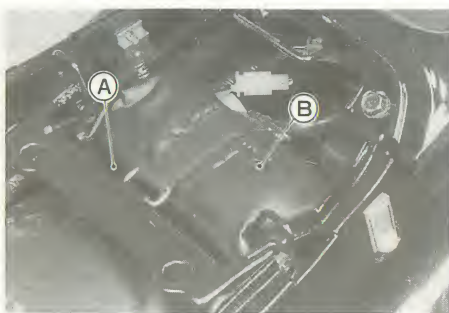
### **Tool Kit Compartment**

The document/tool kit compartment is located under the seat.

Use the compartment to keep the owner's manual and any papers or documents that should be kept with the motorcycle.

Also store the tool kit in the compartment. The minor adjustments and replacement of parts explained in this manual can be performed with the tools in the kit.





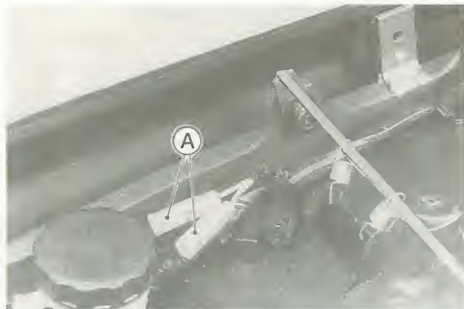
A. Document/Tool Kit Compartment  
B. Tool Kit

## Electric Accessory Leads

The electric power of the battery can be used through the electric accessory leads regardless of ignition switch position. Observe and follow the notes listed below.

## Electric Accessory Leads

Location	Polarity	Lead Color
Under Seat	(+)	White/Blue
	(-)	Yellow/Black
Maximum Current : 10A		



A. Accessory Leads

### **⚠ WARNING**

Take care not to pinch any lead between the seat and the frame or between other parts to avoid a short circuit.

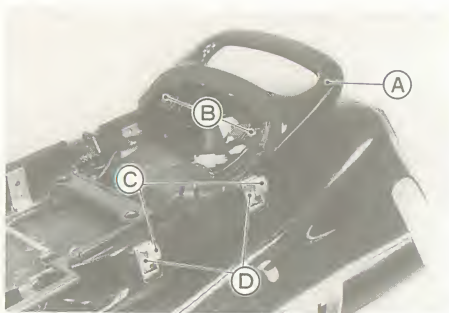
### **⚠ CAUTION**

Whenever you leave the motorcycle, stop using the electric accessories. Be careful not to discharge the battery totally. For example, if a current of 10 amperes is continuously taken out with the engine stopped, even an originally-fully-charged battery may become totally discharged in about 20 minutes.

## Side Covers

To remove the side covers:

- Remove the seat.
- Remove the passenger's grab rail and tying hooks.

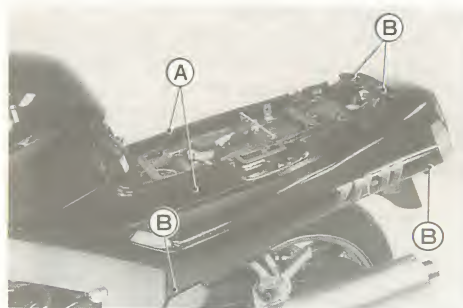


A. Grab Rail

B. Bolts

C. Tying Hooks

D. Screws



A. Side Covers

B. Screws

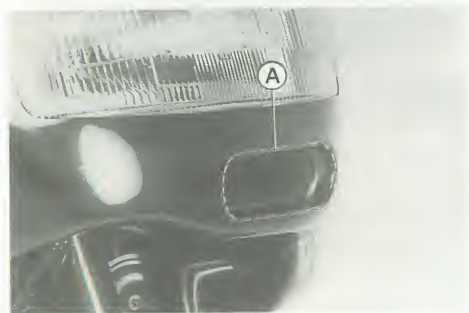
## NOTE

○ Side Cover installation is performed in the reverse order of removal.

- Disconnect the rear turn signal leads.
- Unscrew the side cover mounting screws and take off the side covers.

## Air Cleaner Intake

The air cleaner intake allows air to enter the engine. Never allow anything to restrict the flow of air into the air cleaner. A restricted air cleaner will reduce performance and increase exhaust emissions.



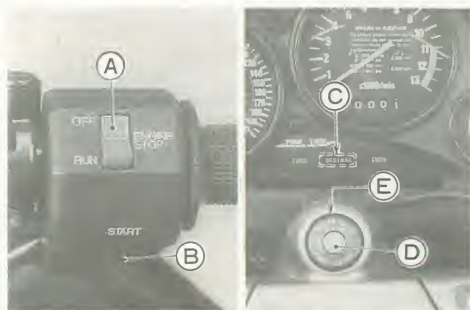
A. Air Cleaner Intake

Distance traveled	Maximum engine speed
0 ~ 800 km (0 ~ 500 mi)	4,000 r/min (rpm)
800 ~ 1,600 km (500 ~ 1,000 mi)	6,000 r/min (rpm)

- In addition to the above, at 800 km (500 mi) it is extremely important that the owner have the initial maintenance service performed by a competent mechanic following the procedures in the Service Manual.

## Starting the Engine

- Check that the engine stop switch is in the RUN position.
- Turn the ignition switch on.
- Make certain the transmission is in neutral.



- A. Engine Stop Switch
- B. Starter Button
- C. Neutral Indicator Light
- D. Ignition Switch
- E. ON position

- If the engine is cold, pull the choke lever all the way.

## NOTE

- When the engine is already warm or on hot days [35°C (95°F) or more], open the throttle part way instead of using the choke, and then start the engine.



A. Choke Lever

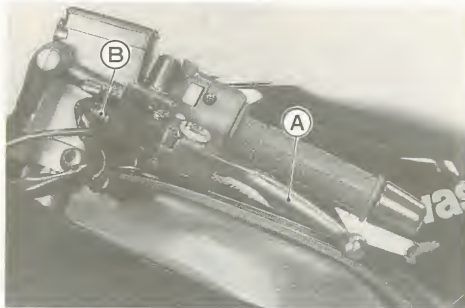
- Leaving the throttle completely closed, push the starter button until the engine starts.

### ⚠ CAUTION

Do not operate the starter continuously for more than 5 seconds or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each operation of the starter to let it cool and the battery power recover.

### NOTE

- If the engine is flooded, crank the engine over with the throttle fully open until the engine starts.
- The motorcycle is equipped with a starter lockout switch. This switch prevents the electric starter from operating when the clutch is engaged and the transmission is not in neutral.



A. Clutch Lever  
B. Starter Lockout Switch

- Gradually return the choke toward the off position a little at a time as necessary to keep the engine speed below 2,500 r/min (rpm) during warm-up.
- When the engine is warmed up enough to idle without using the choke, return the choke to the off position.

## NOTE

○ *If you drive the motorcycle before the engine is warmed up, return the choke to the off position as soon as you start moving.*

### ⚠ CAUTION

Do not let the engine idle longer than five minutes, or engine overheating and damage may occur.

## Jump Starting

If your motorcycle battery is "run down," it should be removed and charged. If this is not practical, a 12 volt booster battery and jumper cables may be used to start the engine.

### ⚠ WARNING

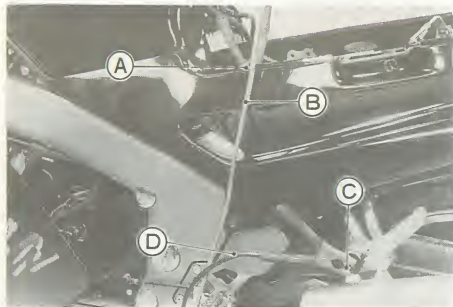
Battery acid generates hydrogen gas which is flammable and explosive under certain conditions. It is present within a battery at all times, even in a discharged condition. Keep all flames and sparks (cigarettes) away from the battery. Wear eye protection when working with a battery. In the event of battery acid contact with skin, eyes, or clothing, wash the affected areas immediately with water for at least five minutes. Seek medical attention.

### *Connecting Jumper Cables*

- Remove the seat.



- Make sure the ignition switch is turned "OFF."
- Connect a jumper cable from the positive (+) terminal of the booster battery to the positive (+) terminal of the motorcycle battery.



- A. Motorcycle Battery Positive (+) Terminal
- B. To Booster Battery Positive (+) Terminal
- C. Unpainted Metal Surface
- D. To Booster Battery Negative (-) Terminal

- Connect another jumper cable from the negative (-) terminal of the booster battery to your motorcycle rear brake pedal or other unpainted metal surface. Do not use the negative (-) terminal of the battery.

#### **⚠ WARNING**

**Do not make this last connection at the carburetor or battery. Take care that you do not touch the positive and negative cables together, and do not lean over the battery when making this last connection. Do not jump start a frozen battery. It could explode.**

**Do not reverse polarity by connecting positive (+) to negative (-) or a battery explosion and serious damage to the electrical system may occur.**

- Follow the standard engine starting procedure.

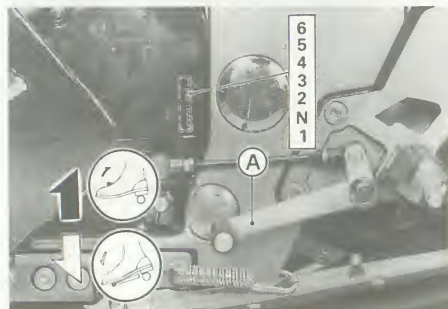
## **⚠CAUTION**

**Do not operate the starter continuously for more than 5 seconds or the starter will overheat and the battery power will drop temporarily. Wait 15 seconds between each operation of the starter to let it cool and the battery power recover.**

- After the engine starts, disconnect the jumper cables. Disconnect the negative (-) cable from the motorcycle first.

## **Moving Off**

- Check that the side stand is up.
- Pull in the clutch lever.
- Shift into 1st gear.
- Open the throttle a little, and start to let out the clutch lever very slowly.
- As the clutch starts to engage, open the throttle a little more, giving the engine just enough fuel to keep it from stalling.



**A. Shift Pedal**

## NOTE

- *The motorcycle is equipped with a side stand switch. This switch is designed so that the engine stops if the clutch is engaged with the transmission in gear when the side stand has been left down.*

## Shifting Gears

- Close the throttle while pulling in the clutch lever.
- Shift into the next higher or lower gear. For smooth riding, each gear position should cover the proper rate of speed shown in the table.

### WARNING

When shifting down to a lower gear, do not shift at such a high speed that the engine r/min (rpm) jumps excessively. Not only can this cause engine damage, but the rear wheel may skid and cause an accident. Downshifting should be done below 5,000 r/min (rpm) for each gear.

- Open the throttle part way, while releasing the clutch lever.

### Vehicle speed when shifting

Shifting up	km/h(mph)	Shifting down	km/h(mph)
1st → 2nd	15(9)	6th → 5th	30(19)
2nd → 3rd	25(15)	5th → 4th	25(15)
3rd → 4th	35(21)	4th → 3rd	20(12)
4th → 5th	45(27)	3rd → 2nd	15(9)
5th → 6th	55(34)	2nd → 1st	15(9)

### NOTE

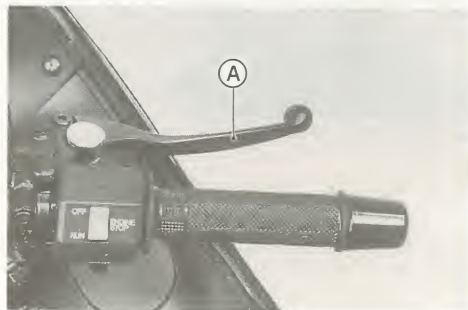
- *The transmission is equipped with a positive neutral finder. When the motorcycle is standing still, the transmission cannot be shifted past neutral from 1st gear. To use the positive neutral finder, shift down to 1st gear, then lift up on the shift pedal while standing still. The transmission will shift only into neutral.*

## Braking

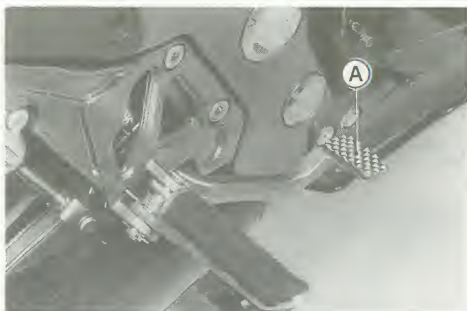
- Close the throttle completely, leaving the clutch engaged (except when shifting gears) so that the engine will help slow down the motorcycle.
- Shift down one gear at a time so that you are in 1st gear when you come to a complete stop.
- When stopping, always apply both brakes at the same time. Normally the front brake should be applied a little more than the rear. Shift down or fully disengage the clutch as necessary to keep the engine from stalling.
- Never lock the brakes, or it will cause the tires to skid. When turning a corner, it is better not to brake at all. Reduce your speed before you get into the corner.
- For emergency braking, disregard downshifting, and concentrate on applying the brakes as hard as possible without skidding.

## ⚠ CAUTION

In order to protect the emission control parts, do not turn off the ignition switch when the motorcycle is in motion.



A. Front Brake Lever



**A. Rear Brake Pedal**

### **Stopping the Engine**

- Close the throttle completely.
- Shift the transmission into neutral.
- Turn the ignition switch off.
- Support the motorcycle on a firm level surface with the side or center stand.
- Lock the steering.

## Stopping the Motorcycle in an Emergency

Your Kawasaki Motorcycle has been designed and manufactured to provide you optimum safety and convenience. However, in order to fully benefit from Kawasaki's safety engineering and craftsmanship, it is essential that you, the owner and operator, properly maintain your motorcycle and become thoroughly familiar with its operation. Improper maintenance and insufficient riding skills can create a dangerous situation known as throttle failure. Two of the most common causes of throttle failure are:

1. During removal of the air cleaner by the owner, dirt is allowed to enter and jam the carburetor.
2. A novice may forget which direction the throttle rotates; then jerk the throttle wide open thinking he has shut it off. He may panic when the machine accelerates suddenly instead of slowing down; and "freeze," holding the throttle wide open.

In an emergency situation such as throttle failure, your motorcycle may be stopped by disengaging the clutch and applying the brakes. Once this stopping procedure is initiated, the engine stop switch may be used to stop the engine. If the engine stop switch is used, turn off the ignition switch after stopping the motorcycle.

## Parking

- Shift the transmission into neutral and turn the ignition switch off.
- Support the motorcycle on a firm level surface with the side or center stand.

### ⚠ CAUTION

**Do not park on a soft or steeply inclined surface or the motorcycle may fall over.**

- If parking inside a garage or other structure, be sure it is well ventilated and the motorcycle is not close to any source of flame or sparks; this includes any appliance with a pilot light.

### ⚠ WARNING

**Gasoline is extremely flammable and can be explosive under certain conditions.**

- Lock the steering to help prevent theft.

## NOTE

- *When stopping near traffic at night, you can leave the taillight on for greater visibility by turning the ignition switch to the P (Park) position.*
- *Do not leave the switch at P position too long, or the battery will discharge.*





On rainy days, rely more on the throttle to control vehicle speed and less on the front and rear brakes. The throttle should also be used judiciously to avoid skidding the rear wheel from too rapid acceleration or deceleration.

Riding at the proper rate of speed and avoiding unnecessarily fast acceleration are important not only for safety and low fuel consumption but also for long vehicle life and quieter operation.

When riding in wet conditions or on loose roadway surfaces, the ability to maneuver will be reduced. All of your actions should be smooth under these conditions. Sudden acceleration, braking or turning may cause loss of control.

On rough roads, exercise caution, slow down, and grip the fuel tank with the knees for better stability.

When quick acceleration is necessary as in passing, shift to a lower gear to obtain the necessary power.

Do not downshift at too high an r/min (rpm) to avoid damage to the engine from overrevving.

Avoiding unnecessary weaving is important to the safety of both the rider and other motorists.

## Daily Safety Checks

Check the following items each day before you ride. The time required is minimal, and habitual performance of these checks will help ensure you a safe, reliable ride.

If any irregularities are found during these checks, refer to the Maintenance and Adjustment chapter or see your dealer for the action required to return the motorcycle to a safe operating condition.

### ⚠ WARNING

**Failure to perform these checks every day before you ride may result in serious damage or a severe accident.**

Fuel .....	Adequate supply in tank, no leaks.
Engine oil .....	Oil level between level lines.
Tires.....	Air pressure (when cold):

Front and Rear	290 kPa (2.9 kg/cm <sup>2</sup> , 41 psi)
----------------	---

Drive chain .....	Slack 35 ~ 45 mm (1.4 ~ 1.8 in.).
Nuts, bolts, fasteners .....	Check that steering and suspension components, axles, and all controls are properly tightened or fastened.
Steering .....	Action smooth but not loose from lock to lock. No binding of control cables.
Brakes .....	Brake pad wear: Lining thickness more than 1 mm (0.04 in.) left. No brake fluid leakage.
Throttle .....	Throttle grip play 2 ~ 3 mm (0.08 ~ 0.12 in.).
Clutch .....	No clutch fluid leakage.
Coolant .....	No coolant leakage. Coolant level between level lines (when engine is cold).
Radiator cap .....	Properly installed.
Electrical equipment .....	All lights and horn work.
Engine stop switch .....	Stops engine.
Side and center stand .....	Returns to their fully up positions by spring tension. Return spring not weak or not damaged.

Refer to the “Daily Safety Checks” caution label attached to the rear end of the fuel tank (Canadian model: on the document/tool kit compartment).

### **Additional Considerations for High Speed Operation**

**Brakes:** The importance of the brakes, especially during high speed operation, cannot be overemphasized. Check to see that they are correctly adjusted and functioning properly.

**Steering:** Looseness in the steering can cause loss of control. Check to see that the handlebar turns freely but has no play.

**Tires:** High speed operation is hard on tires, and good tires are crucial for riding safety. Examine their overall condition, inflate to the proper pressure, and check the wheel balance.

**Fuel:** Have sufficient fuel for high consumption during high speed operation.

**Engine Oil:** To avoid seizure and resulting loss of control, make certain that the oil level is at the upper level line.

**Coolant:** To avoid overheating, check that the coolant level is at the upper level line.

**Electrical Equipment:** Make certain that the headlight, tail/brake light, turn signals, horn, etc., all work properly.

**Miscellaneous:** Make certain that all nuts and bolts are tight and that all safety related parts are in good condition.

### **⚠ WARNING**

**Handling characteristics of a motorcycle at high speeds may vary from those you are familiar with at legal highway speeds. Do not attempt high speed operation unless you have received sufficient training and have the required skills.**

The maintenance and adjustments outlined in this chapter are easily carried out and must be done in accordance with the Periodic Maintenance Chart to keep the motorcycle in good running condition. **The initial maintenance is vitally important and must not be neglected.**

If you are in doubt as to any adjustment or vehicle operation, please ask your authorized Kawasaki dealer to check the motorcycle.

Please note that Kawasaki cannot assume any responsibility for damage resulting from incorrect maintenance or improper adjustment done by the owner.

# Periodic Maintenance Chart

Frequency		*Odometer Reading							
		km (mi)							
Operation	Every	800 (500)	5,000 (3,000)	10,000 (6,000)	15,000 (9,000)	20,000 (12,000)	25,000 (15,000)	30,000 (18,000)	See Page
	Whichever comes first								
Emission Related	Carburetor synchronization --check †		•	•	•	•	•	•	87
	Idle speed--check †		•	•	•	•	•	•	87
	Throttle grip play--check †		•	•	•	•	•	•	83
	Spark plug--clean and gap †		•	•	•	•	•	•	73
	Valve clearance--check †		•	•	•	•	•	•	79
	Air suction valve--check †		•	•	•	•	•	•	78
	Air cleaner element and air vent filter--clean		•	•	•	•	•	•	79
	Air cleaner element and air vent filter--replace	5 cleanings				•			79
	Fuel system--check			•		•		•	117
	Evaporative emission control system (c)--check †		•	•	•	•	•	•	77
Non-Emission	Battery electrolyte level--check †	month	•	•	•	•	•	•	109
	K Brake light switch--check †		•	•	•	•	•	•	100
	Brake pad wear--check †			•	•	•	•	•	97
	Brake/clutch fluid level--check †	month	•	•	•	•	•	•	89, 98

Frequency		*Odometer Reading							
		km (mi)							
Operation	Whichever comes first								
	Every	800 (500)	5,000 (3,000)	10,000 (6,000)	15,000 (9,000)	20,000 (12,000)	25,000 (15,000)	30,000 (18,000)	See Page
Non-Emissions Related	K Brake/clutch fluid--change	2 years				•			89,99
	K Steering--check †		•	•	•	•	•	•	—
	Drive chain wear--check †			•	•	•	•	•	95
	Nut, bolt, fastener tightness --check †		•	•		•		•	123
	Tire wear--check †			•	•	•	•	•	107
	Engine oil-change	year	•		•	•		•	66
	Oil filter-replace		•		•	•		•	66
	General lubrication--perform			•	•	•	•	•	117
	K Front fork oil-change							•	—
	K Swing arm pivot, uni-trak linkage--lubricate			•		•		•	—
	K Coolant--change	2 years						•	72
	Radiator hoses, connections --check †	year	•		•	•		•	68
	K Steering stem bearing--lubricate	2 years				•			—



Frequency Operation		Which ever comes first ↓	*Odometer Reading km (mi)							See Page
			800 (500)	5,000 (3,000)	10,000 (6,000)	15,000 (9,000)	20,000 (12,000)	25,000 (15,000)	30,000 (18,000)	
Non-Emission Related	K Fuel filter--replace	Every		•		•		•		—
	K Brake/clutch master cylinder cup and dust seal--replace	2 years								—
	K Caliper piston seal and dust seal--replace	2 years								—
	K Clutch slave cylinder piston seal--replace	2 years								—
	K Brake hose/clutch hose and pipe --replace	4 years								—
	K Fuel hose--replace	4 years								—
	Drive chain--lubricate	Every 300 km (200 mi)								95
	Drive chain slack--check †	Every 800 km (500 mi)								91

**K** : Should be serviced by an authorized Kawasaki Dealer.

**\*** : For higher odometer readings, repeat at the frequency interval established here.

**†** : Replace, add, adjust, or torque if necessary.

(c): California model only

## Engine Oil

In order for the engine, transmission, and clutch to function properly, maintain the engine oil at the proper level, and change the oil and oil filter in accordance with the Periodic Maintenance Chart. Not only do dirt and metal particles collect in the oil, but the oil itself loses its lubricative quality if used too long.

### ⚠ WARNING

**Motorcycle operation with insufficient, deteriorated, or contaminated engine oil will cause accelerated wear and may result in engine or transmission seizure, accident, and injury.**

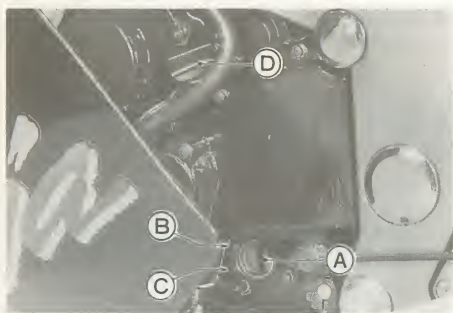
### ⚠ CAUTION

**Racing the engine before the oil reaches every part can cause engine seizure.**

- If the motorcycle has just been used, wait the engine cools down.
- Check the engine oil level through the oil level gauge. With the motorcycle held level, the oil level should come up between the lines next to the gauge.

### *Oil Level Inspection*

- If the oil has just been changed, start the engine and run it for several minutes at idle speed. This fills the oil filter with oil. Stop the engine, then wait the engine cools down.



- A. Oil Level Gauge
- B. Upper Level Line
- C. Lower Level Line
- D. Oil Filler Cap

- If the oil level is too high, remove the excess oil, using a syringe or other suitable device.
- If the oil level is too low, add the correct amount of oil through the oil filler opening. Use the same type and brand of oil that is already in the engine.

### ⚠ CAUTION

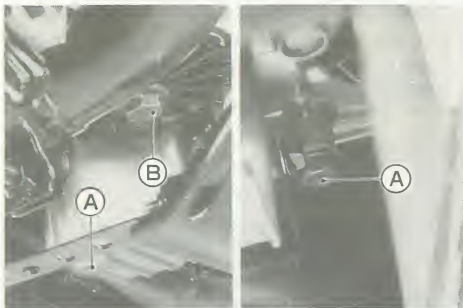
If the engine oil gets extremely low or if the oil pump or oil passages clog up or otherwise do not function properly, the oil pressure warning light will light. If this light stays on when the engine speed is above 1,200 r/min (rpm), stop the engine immediately and find the cause.



A. Oil Pressure Warning Light

### Oil and/or Oil Filter Change

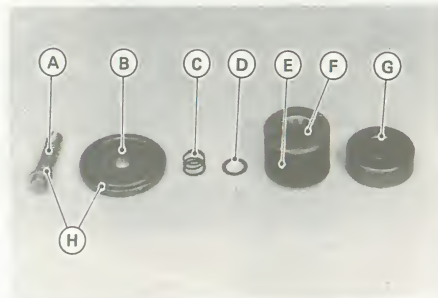
- Warm up the engine thoroughly, and then stop the engine.
- Place an oil pan beneath the engine.
- Remove the engine drain plugs.



A. Drain Plug  
B. Oil Filter Mounting Bolt

- With the motorcycle perpendicular to the ground, let the oil completely drain.
- If the oil filter is to be changed, remove the oil filter mounting bolt and drop out the oil filter.

- Replace the oil filter element with a new one.



A. Mounting Bolt  
B. Filter Cover  
C. Spring  
D. Flat Washer  
E. Element  
F. Grommet  
G. Element Fence  
H. O-Ring

### NOTE

- Check for O-ring damage. If necessary, replace them with new ones.
- When installing the oil filter, make sure the O-rings are in place.

- Apply a little engine oil to the O-ring on the filter mounting bolt, fit the filter cover on the bolt, and install the spring and flat washer.
- Apply a little engine oil to the grommets on both sides of the element, and turn the filter to work the element into place. Be careful that the element grommets do not slip out of place.
- Install the element fence on the bolt.
- Install the oil filter, tightening its mounting bolt to the specified torque.
- After the oil has completely drained out, install the engine drain plugs with their gaskets. Proper torque for them are shown in the table.

### NOTE

○ *Replace the damaged gasket with a new one.*

- Fill the engine up to the upper level line with a good quality motor oil specified in the table.
- Check the oil level.

### Tightening Torque

#### Engine Drain Plugs:

29 N-m (3.0 kg-m, 22 ft-lb)

#### Oil Filter Mounting Bolt:

20 N-m (2.0 kg-m, 14.5 ft-lb)

### Engine Oil

Grade: SE or SF class

Viscosity: SAE 10W40, 10W50,  
20W40, or 20W50

Capacity: 3.2 L (3.4 US qt)  
[when filter is not removed]  
3.5 L (3.7 US qt)  
[when filter is removed]

## Cooling System

### Radiator and Cooling Fan:

Check the radiator fins for obstruction by insects or mud. Clean off any obstructions with a stream of low-pressure water.

#### **⚠ WARNING**

The cooling fan turns on automatically, even with the ignition switch off. Keep your hands and clothing away from the fan blades at all times.

#### **⚠ CAUTION**

Using high-pressure water, as from a car wash facility, could damage the radiator fins and impair the radiator's effectiveness.

Do not obstruct or deflect airflow through the radiator by installing unauthorized accessories in front of the radiator or behind the cooling fan. Interference with the radiator airflow can lead to overheating and consequent engine damage.

### Radiator Hoses:

Check the radiator hoses for cracks or deterioration, and connections for looseness in accordance with the Periodic Maintenance Chart.

### Coolant:

Coolant absorbs excessive heat from the engine and transfers it to the air at the radiator. If the coolant level becomes low, the engine overheats and may suffer severe damage. Check the coolant level each day before riding the motorcycle, and replenish coolant if the level is low. Change the coolant in accordance with the Periodic Maintenance Chart.

### *Information for Coolant*

To protect the cooling system (consisting of the aluminum engine and radiator) from rust and corrosion, the use of corrosion and rust inhibitor chemicals in the coolant is essential. If coolant containing corrosion and rust inhibitor chemicals is not used, over a period of time, the cooling system accumulates rust and scale in the water jacket and radiator. This will clog up the coolant passages, and considerably reduce the efficiency of the cooling system.

### **⚠ WARNING**

**Use coolant containing corrosion inhibitors made specifically for aluminum engines and radiators in accordance with the instructions of the manufacturer. Chemicals are harmful to the human body.**

Soft or distilled water must be used with the antifreeze (see below for antifreeze) in the cooling system.

### **⚠ CAUTION**

**If hard water is used in the system, it causes scale accumulation in the water passages, and considerably reduces the efficiency of the cooling system.**

If the lowest ambient temperature encountered falls below the freezing point of water, use permanent antifreeze in the coolant to protect the cooling system



against engine and radiator freeze-up, as well as from rust and corrosion.

Use a permanent type of antifreeze (soft water and ethylene glycol plus corrosion and rust inhibitor chemicals for aluminum engines and radiators) in the cooling system. On the mixture ratio of coolant, choose the suitable one referring to the relation between freezing point and strength directed on the container.

#### **⚠CAUTION**

**Permanent types of antifreeze on the market have anti-corrosion and anti-rust properties. When it is diluted excessively, it loses its anti-corrosion property. Dilute a permanent type of antifreeze in accordance with the instructions of the manufacturer.**

#### **NOTE**

- *A permanent type of antifreeze is installed in the cooling system when shipped. It is colored green, contains a 50% solution of ethylene glycol, and has the freezing point of  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ ).*

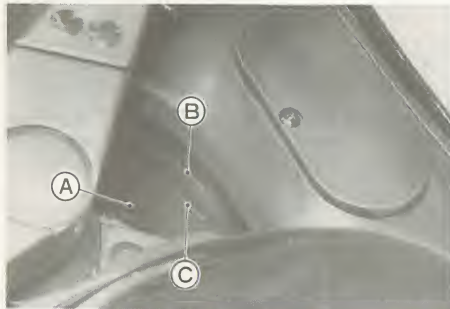
#### *Coolant Level Inspection*

- Situate the motorcycle so that it is perpendicular to the ground.
- Check the coolant level through the coolant level gauge on the reserve tank located inside the right fairing. The coolant level should be between the upper and lower level lines.

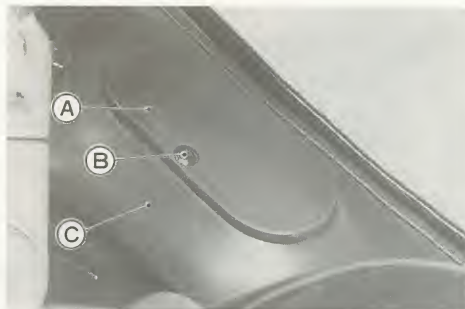
#### **NOTE**

- *Check the level when the engine is cold (room or atmospheric temperature).*



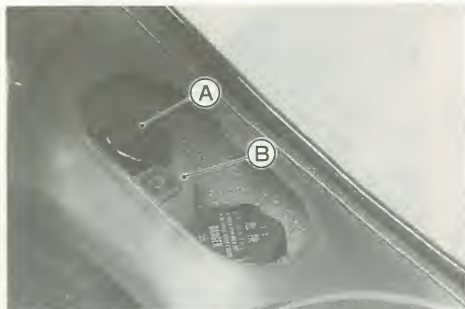


**A. Reserve Tank**  
**B. Upper Level Line**  
**C. Lower Level Line**



**A. Cap**  
**B. Screw**  
**C. Right Inner Fairing**

- If the amount of coolant is insufficient, remove the cap on the right inner fairing, unscrew the cap from the reserve tank and add coolant through the filler opening to the upper level line.



A. Cap

B. Reserve Tank

- Install the removed parts.

## NOTE

- *In an emergency you can add water alone to the coolant reserve tank, however it must be returned to the correct mixture ratio by the addition of antifreeze concentrate as soon as possible.*

## ⚠ CAUTION

If coolant must be added often, or the reserve tank completely runs dry, there is probably leakage in the system. Have the cooling system inspected by your authorized Kawasaki dealer.

### *Coolant Change*

Have the coolant changed by an authorized Kawasaki dealer.

## Spark Plugs

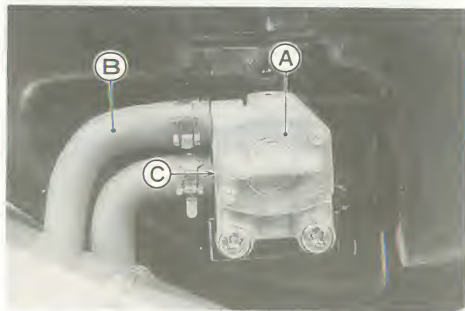
The standard spark plug is shown in the table. The spark plugs should be taken out periodically in accordance with the Periodic Maintenance Chart for cleaning, inspection, and resetting of the plug gap.

### Maintenance

If the plug is oily or has carbon built up on it, have it cleaned, preferably in a sand-blasting device, and then clean off any abrasive particles. The plug may also be cleaned using a high flash-point solvent and a wire brush or other suitable tool. Measure the gap with a wire-type thickness gauge, and adjust the gap if incorrect by bending the outer electrode. If the spark plug electrodes are corroded or damaged, or if the insulator is cracked, replace the plug. Use the standard plug.

### Spark Plug Removal

- Remove the seat.
- Remove both side covers (see Side Covers in the General Information chapter).
- Turn the fuel tap to the OFF position to stop the fuel flow.
- Pull the upper hose that leads to the carburetors off the tap.



A. Fuel Tap  
B. Upper Hose

C. OFF position

- Remove the left and right inner fairings.

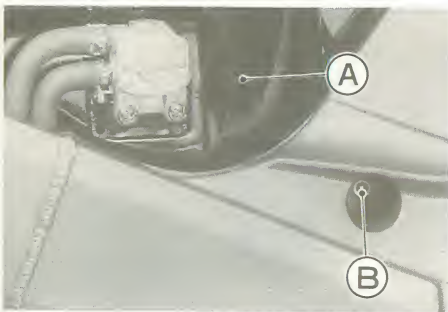


**A. Inner Fairings**

- Remove the front and rear fuel tank mounting bolts and remove the fuel tank.

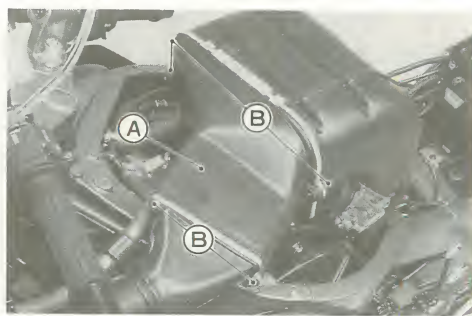


**A. Fuel Tank**  
**B. Mounting Bolts (Front)**



A. Fuel Tank  
B. Mounting Bolt (Rear)

- Remove the front air cleaner housing.

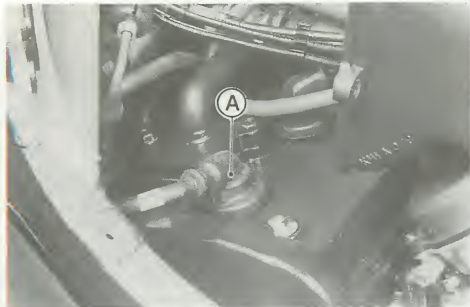


A. Front Air Cleaner Housing  
B. Screws

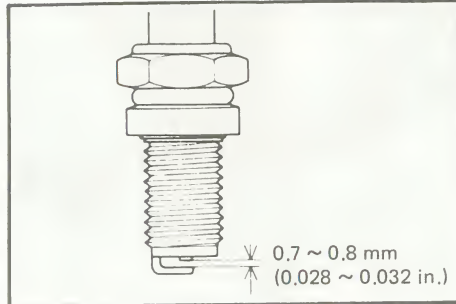
- Carefully pull the spark plug caps from the spark plugs.
- Unscrew the spark plugs.

### NOTE

- *Spark plug installation is performed in the reverse order of removal.*



**A. Spark Plug Cap**



### Spark Plug

Standard Plug	NGK C9E or ND U27ES-N
	© NGK CR9E or ND U27ESR-N
Plug Gap	0.7 ~ 0.8 mm (0.028 ~ 0.032 in.)
Tightening Torque	14 N-m (1.4 kg-m, 10 ft-lb)

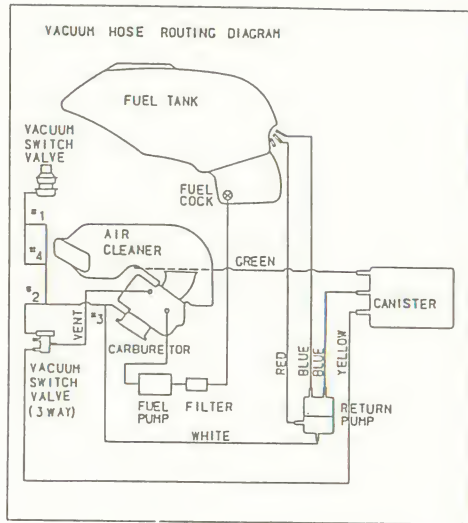
© : Canadian model

## Evaporative Emission Control System (California model only)

This system routes fuel vapors from the fuel system into the running engine or stores the vapors in a canister when the engine is stopped. Although no adjustments are required, a thorough visual inspection must be made at the intervals specified by the Periodic Maintenance Chart.

### Inspection

- Check that the hoses are securely connected.
- Replace any kinked, deteriorated, or damaged hoses.



## **Kawasaki Clean Air System**

The Kawasaki Clean Air System (KCA) is a secondary air suction system that helps the exhaust gases to burn more completely. When the spent fuel charge is released into the exhaust system, it is still hot enough to burn. The KCA System allows extra air into the exhaust system so that the spent fuel charge can continue to burn. This continued burning action tends to burn up a great deal of the normally unburned gases, as well as changing a significant portion of the poisonous carbon monoxide into harmless carbon dioxide.

### **Air Suction Valves:**

The air suction valve is essentially a check valve which allows fresh air to flow only from the air cleaner into the exhaust port. Any air that has passed the air suction valve is prevented from returning. Inspect the air suction valves in accordance with the Periodic Maintenance Chart. Also, inspect the air suction valves whenever stable idling cannot be obtained, engine power is

greatly reduced, or there are abnormal engine noises.

Air suction valve removal and inspection should be done only by a competent mechanic following the instructions in the Service Manual.



## Valve Clearance

Valve and valve seat wear decreases valve clearance, upsetting valve timing.

### ⚠CAUTION

**If valve clearance is left unadjusted, the wear will eventually cause the valves to remain partly open, which lowers performance, burns the valves and valve seats, and may cause serious engine damage.**

Valve clearance for each valve should be checked and adjusted in accordance with the Periodic Maintenance Chart.

Inspection and adjustment should be done only by a competent mechanic following the instructions in the Service Manual.

## Air Cleaner

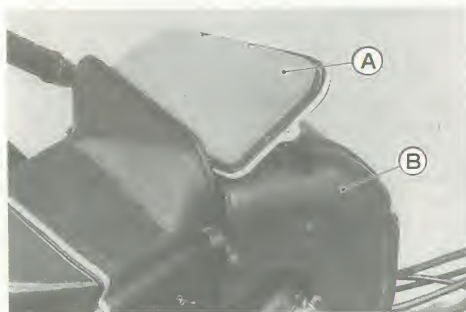
A clogged air cleaner restricts the engine's air intake, increasing fuel consumption, reducing engine power, and causing spark plug fouling.

The air cleaner element and air vent filter must be cleaned and replaced in accordance with the Periodic Maintenance Chart. In dusty areas, the element should be cleaned more frequently than the recommended interval. After riding through rain or on muddy roads, the element should be cleaned immediately. The element should be replaced if it is damaged.

### *Element Removal*

- Remove the seat.
- Remove the left and right side covers (see Side Covers in the General Information chapter).
- Remove the fuel tank (see Spark Plug Removal).
- Unscrew the rear mounting screws of the front air cleaner housing.

- Take the element off the rear air cleaner housing.



A. Element  
B. Rear Air Cleaner Housing

- Stuff the gap where the element was removed with a clean, lint-free towel to keep dirt or other foreign material from entering.
- Inspect the element material for damage. If any part of the element is damaged, the element must be replaced.

#### **⚠ WARNING**

If dirt or dust is allowed to pass through into the carburetors, the throttle may become stuck, possibly causing accident.

#### **⚠ CAUTION**

If dirt gets through into the engine, excessive engine wear and possibly engine damage will occur.

#### **NOTE**

○ *Element installation is performed in the reverse order of removal.*

### *Element Cleaning*

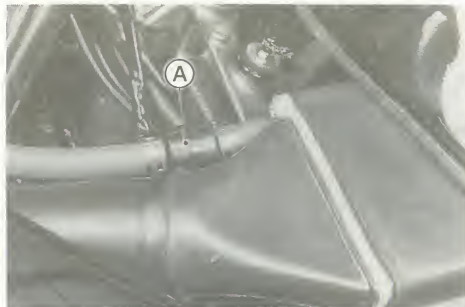
- Clean the element in a bath of a high flash-point solvent.
- Dry the element with compressed air or by shaking it.
- After cleaning, saturate the element with SE class SAE 30 motor oil.
- Press the element against a workbench to squeeze out the excess oil, then wrap it in a clean rag and squeeze it as dry as possible. Be careful not to deform the element frame and the expanded metal.

### **⚠ WARNING**

Clean the element in a well ventilated area, and take care that there are no sparks or flame anywhere near the working area; this includes any appliance with a pilot light. Do not use gasoline or a low flash-point solvent to clean the element. A fire or explosion could result.

### *Air Vent Filter Cleaning*

- Remove the left inner fairing.
- Remove the air vent filter.

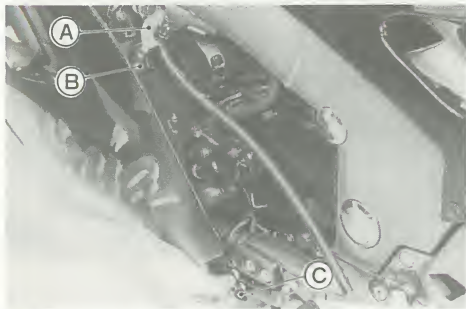


**A. Air Vent Filter**

- Clean the filter by directing a stream of compressed air from the clean side to the dirty side.
- After cleaning, install the air vent filter.

### *Oil Draining*

- Inspect the transparent reservoir located to the left side of the engine to see if any oil has run down from the air cleaner housing.



**A. Reservoir**  
**B. Drain Hose**

**C. Plug**

- If there is any oil in the reservoir, remove the plug from the lower end of the drain hose and drain the oil.

### **⚠ WARNING**

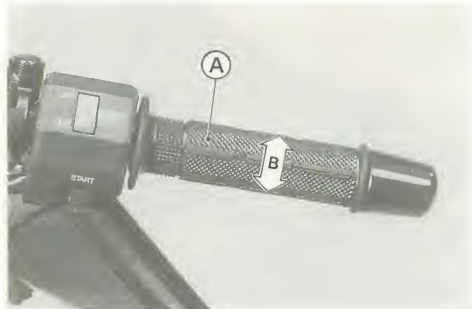
**Be sure to install the plug in the drain hose after draining. Oil on tires will make them slippery and can cause an accident and injury.**

## Throttle Grip

The throttle grip controls the throttle valves. If the throttle grip has excessive play due to either cable stretch or maladjustment, it will cause a delay in throttle response, especially at low engine speed. Also, the throttle valves may not open fully at full throttle. On the other hand, if the throttle grip has no play, the throttle will be hard to control, and the idle speed will be erratic. Check the throttle grip play periodically in accordance with the Periodic Maintenance Chart, and adjust the play if necessary.

### Inspection

- Check that there is 2 ~ 3 mm (0.08 ~ 0.12 in.) throttle grip play when lightly turning the throttle grip back and forth.
- If there is improper play, adjust it.

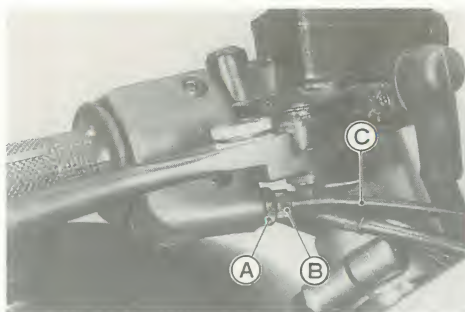


A. Throttle Grip

B. 2 ~ 3 mm (0.08 ~ 0.12 in.)

### Adjustment

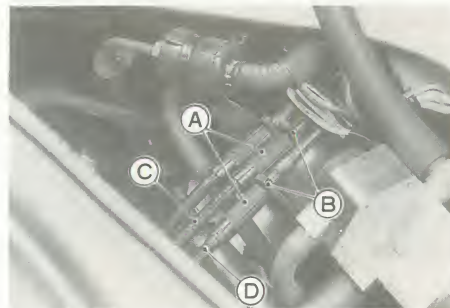
- Loosen the locknut at the throttle grip, and turn the adjuster until the proper amount of throttle grip play is obtained.



A. Locknut                      C. Throttle Cable  
B. Adjuster                      (Accelerator Cable)

- Tighten the locknut.
- If the throttle cables can not be adjusted by using the cable adjuster at the upper end of the throttle cable, use the cable adjusters at the middle of the throttle cables.
- First give the throttle grip plenty of play by turning the adjuster at the grip in fully.
- Remove the fuel tank (see Spark Plug Removal in Spark Plugs section).

- Loosen the locknuts, and turn both throttle cable adjusters fully at the middle of the throttle cables so as to give the throttle grip plenty of play.



A. Adjusters                      C. Decelerator Cable  
B. Locknuts                      D. Accelerator Cable

- With the throttle grip completely closed, turn the decelerator cable adjuster until the inner cable just becomes tight.
- Tighten the locknut.

- Turn the accelerator cable adjuster until the correct throttle grip free play is obtained.
- Tighten the locknut.

#### **⚠ WARNING**

Operation with an improperly adjusted, incorrectly routed, or damaged cable could result in an unsafe riding condition.

### **Choke Lever**

By pulling the choke lever, the carburetor provides a rich starting mixture that is necessary to enable easy starting when the engine is cold.

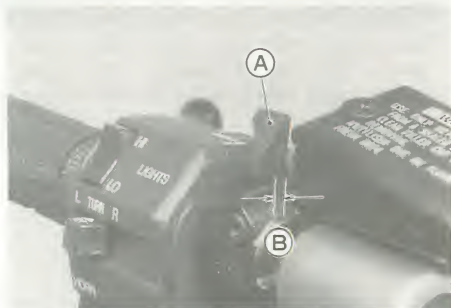
If starting difficulty or rich fuel mixture trouble occurs, inspect the choke lever, and adjust it if necessary.

#### *Inspection*

- Check that the choke lever returns properly and that the inner cable slides smoothly. If there is any irregularity, have the choke cable checked by a competent mechanic following the instructions in the Service Manual.
- Push the choke lever back all the way to its released position.



- The proper amount of play is 2 ~ 3 mm (0.08 ~ 0.12 in.) at the bottom of the choke lever. If there is too much or too little play, adjust the choke cable.

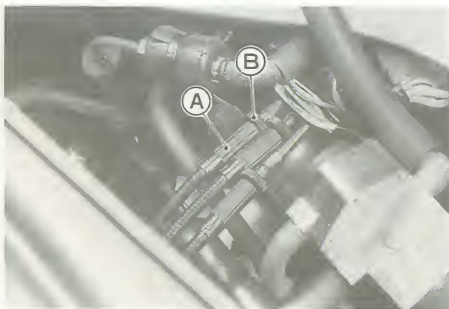


A. Choke Lever  
B. 2 ~ 3 mm (0.08 ~ 0.12 in.)



### Adjustment

- Remove the fuel tank (see Spark Plug Removal in Spark Plugs section).
- Loosen the locknut at the middle of the choke cable, and turn the adjuster until the cable has the proper amount of play.



A. Adjuster

B. Locknut

- Tighten the locknut after adjustment.
- Install the parts removed.

### Carburetors

The carburetor adjustments, idle speed and synchronization, should be performed in accordance with the Periodic Maintenance Chart or whenever the idle speed is disturbed.

The following procedure covers the idle speed adjustment. Carburetor synchronization should be done only by a competent mechanic using vacuum gauges, following the instructions in the Service Manual.

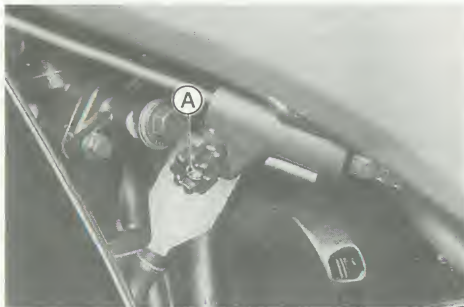
### NOTE

- *Poor carburetor synchronization will cause unstable idling, sluggish throttle response, and reduced engine power and performance.*

### Adjustment

- Start the engine, and warm it up thoroughly.

- Adjust the idle speed to 950 ~ 1,050 (California model: 1,150 ~ 1,250) r/min (rpm) by turning the idle adjusting screw.



A. Idle Adjusting Screw

- Open and close the throttle a few times to make sure that the idle speed does not change. Readjust if necessary.

- With the engine idling, turn the handlebar to each side. If handlebar movement changes the idle speed, the throttle cables may be improperly adjusted or incorrectly routed, or they may be damaged. Be sure to correct any of these conditions before riding.

**⚠ WARNING**

Operation with damaged cables could result in an unsafe riding condition.

## Clutch

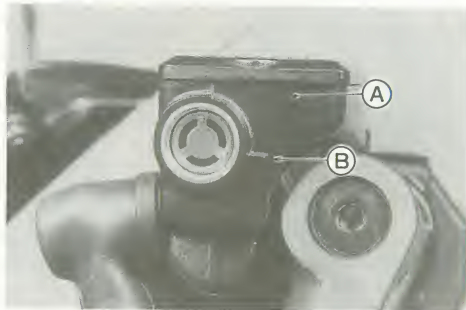
The motorcycle is equipped with a hydraulically operated clutch that requires no adjustment except fluid level inspection in accordance with the Periodic Maintenance Chart.

### *Fluid Level Inspection*

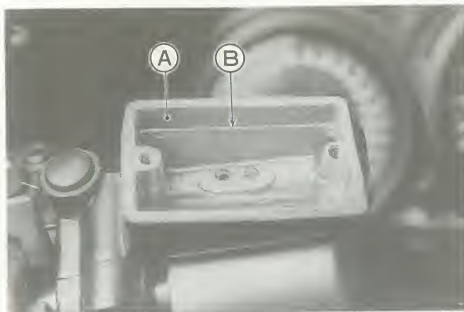
- The fluid level in the reservoir must be kept above the lower level line (reservoir held horizontal).
- Fill the reservoir to the upper level line inside it.

## NOTE

- *Use the same fluid as is used in the brakes and keep the same requirements mentioned in the "Brakes" section.*



A. Clutch Fluid Reservoir  
B. Lower Level Line



**A. Clutch Fluid Reservoir**  
**B. Upper Level Line**

## Drive Chain

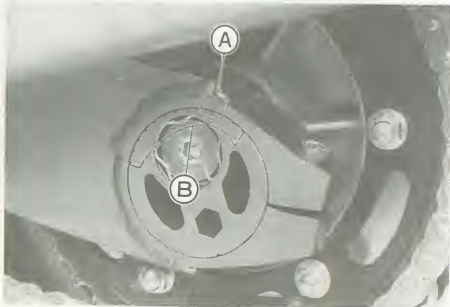
The drive chain must be checked, adjusted, and lubricated in accordance with the Periodic Maintenance Chart for safety and to prevent excessive wear. If the chain becomes badly worn or maladjusted - either too loose or too tight - the chain could jump off the sprockets or break.

### **⚠ WARNING**

**A chain that breaks or jumps off the sprockets could snag on the engine sprocket or lock the rear wheel, severely damaging the motorcycle and causing it to go out of control.**

### Chain Slack Inspection

- Set the motorcycle up on its center stand.
- Check to see if wheel alignment is properly adjusted. The left and right notches on the swing arm should point to the same marks or positions on the left and right chain adjusters. If they do not, adjust wheel alignment as described in the later paragraph – Wheel Alignment Adjustment.



A. Swing Arm Notch

B. Marks

### NOTE

- *Wheel alignment can also be checked using the straightedge or string method.*

### ⚠ WARNING

**Misalignment of the wheel will result in abnormal wear, and may result in an unsafe riding condition.**

- Rotate the rear wheel to find the position where the chain is tightest, and measure the vertical movement midway between the sprockets.



A. 35 ~ 45 mm (1.4 ~ 1.8 in.)

- If the drive chain is too tight or too loose, adjust it so that the chain slack will be within the standard value.

#### Drive Chain Slack

Standard	35 ~ 40mm (1.4 ~ 1.6 in.)
Too tight	less than 35 mm (1.4 in.)
Too loose	more than 45 mm (1.8 in.)

#### Chain Slack Adjustment

- Loosen the rear torque link nut.

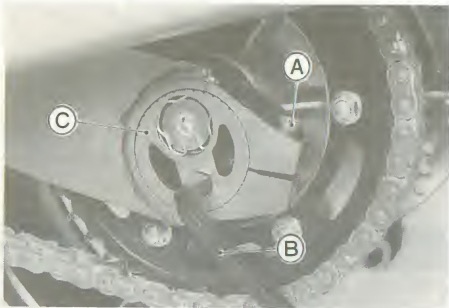
#### ⚠ CAUTION

**Do not forget to loosen the torque link nut**



A. Torque Link Nut

- Loosen the left and right chain adjuster clamp bolts.



A. Adjuster Clamp Bolt  
B. Allen Wrench  
C. Chain Adjuster

- Insert an Allen wrench (12 mm) into the hexagonal hole in the chain adjuster, and turn it forward or rearward until the drive chain has the correct amount of chain slack.
- Tighten the chain adjuster clamp bolts and the rear torque link nut to the specified torque.

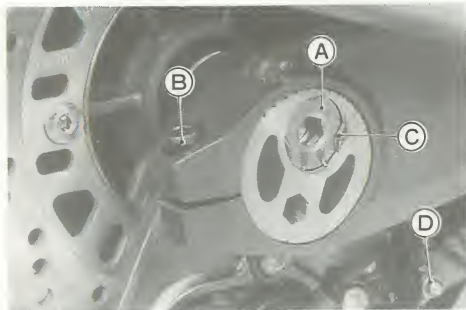
## ⚠ WARNING

**If the torque link nut or the clamp bolts are not securely tightened, an unsafe riding condition may result.**

- Rotate the wheel, measure the chain slack again at the tightest position, and readjust if necessary.
- Check the rear brake effectiveness.

## *Wheel Alignment Adjustment*

- Remove the right retaining ring from the axle shaft.
- Loosen the axle nut.
- Loosen the rear torque link nut.



- A. Axle Nut
- B. Adjuster Clamp Bolt
- C. Retaining Ring
- D. Torque Link Nut

- Loosen the right chain adjuster clamp bolt, and turn the right chain adjuster so that the left and right notches on the swing arm may point to the same marks or positions on the left and right adjusters.
- Tighten the clamp bolt, axle nut, and torque link nut to the specified torque.

- Insert the retaining ring to secure the axle shaft.

## NOTE

- Wheel alignment adjustment can also be performed with the left chain adjuster.

## ⚠ WARNING

If the axle nut, torque link nut, or clamp bolts are not securely tightened, or the retaining rings are not installed, an unsafe riding condition may result.

## Tightening Torque

Axle Nut	110 N-m (11.0 kg-m, 80 ft-lb)
Adjuster Clamp Bolts	39 N-m (4.0 kg-m, 29 ft-lb)
Torque Link Nut	25 N-m (2.5 kg-m, 18 ft-lb)



### *Wear Inspection*

- Stretch the chain taut either by using the chain adjusters, or by hanging a 10 kg (20 lb) weight on the chain.
- Measure the length of 20 links on the straight part of the chain from pin center of the 1st pin to pin center of the 21st pin. Since the chain may wear unevenly, take measurements at several places.
- If the length exceeds the service limit, the chain should be replaced.

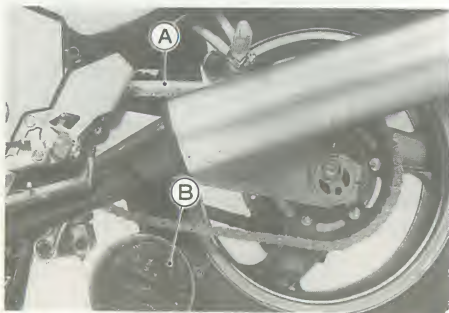
### Drive Chain 20-Link Length

Service Limit: 323 mm (12.7 in.)

### **⚠ WARNING**

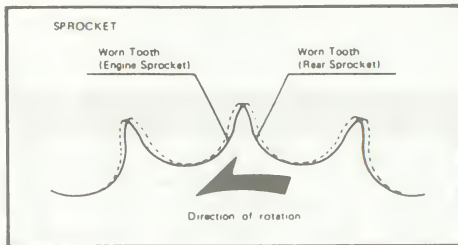
**For safety, use only the standard chain. It is an endless type and should not be cut for installation; have it installed by an authorized Kawasaki dealer.**

- Rotate the rear wheel to inspect the drive chain for damaged rollers, and loose pins and links.
- Also inspect the sprockets for unevenly or excessively worn teeth, and damaged teeth. Service Manual for wear limits.



A. Measure

B. Weight

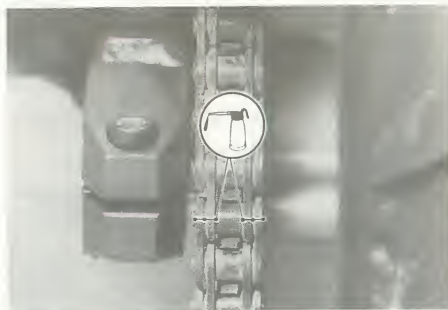


- If there is any irregularity, have the drive chain and/or the sprockets replaced by an authorized Kawasaki dealer.

### *Lubrication*

Lubrication is also necessary after riding through rain or on wet roads, or any time that the chain appears dry. A heavy oil such as SAE 90 is preferred to a lighter oil because it will stay on the chain longer and provide better lubrication.

- Apply oil to the sides of the rollers so that it will penetrate to the rollers and bushings. Apply oil to the O-rings so that the O-rings will be coated with oil. Wipe off any excess oil.

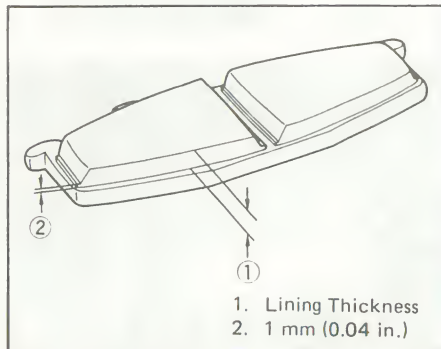


- If the chain is especially dirty, clean it using diesel oil or kerosine and then apply oil as mentioned above.

## Brakes

### Brake Wear Inspection

In accordance with the Periodic Maintenance Chart, inspect the brakes for wear. For each front and rear disc brake caliper, if the thickness of either pad is less than 1 mm (0.04 in.), replace both pads in the caliper as a set. Pad replacement should be done by an authorized Kawasaki dealer.



## Disc Brake Fluid:

In accordance with the Periodic Maintenance Chart, inspect the brake fluid level in the reservoirs and change the brake fluid. The brake fluid should also be changed if it becomes contaminated with dirt or water.

### Fluid Requirement

Recommended fluids are given in the table below. If none of the recommended brake fluids are available, use extra heavy-duty brake fluid only from a container marked D.O.T.4.

### Recommended Disc Brake Fluid

Castrol Girling-Universal  
Castrol GT (LMA)  
Castrol Disc Brake Fluid  
Check Shock Premium Heavy Duty

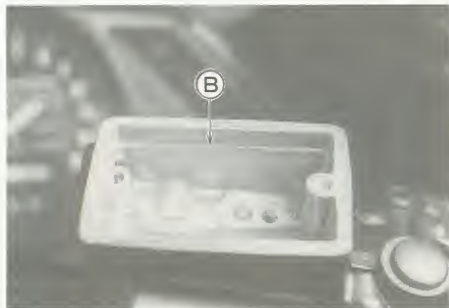
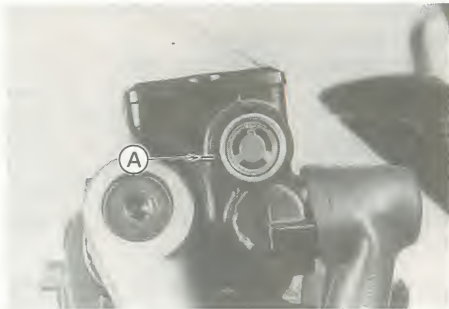
### **⚠CAUTION**

Do not spill brake fluid onto any painted surface.

Do not use fluid from a container that has been left open or that has been unsealed for a long time.

Check for fluid leakage around the fittings.

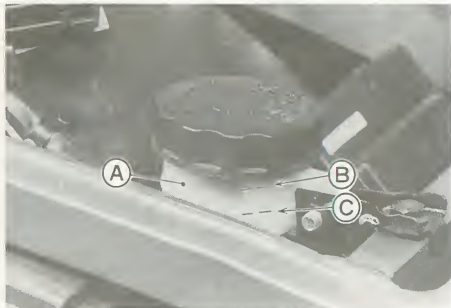
Check for brake hose damage.



A. Lower Level Line B. Upper Level Line

### *Fluid Level Inspection*

- With the reservoirs held horizontal, the brake fluid level must be kept above the lower level line (front reservoir) and between the upper and lower level lines (rear reservoir).
- Fill the reservoirs to the upper level lines.



- A. Rear Reservoir
- B. Upper Level Line
- C. Lower Level Line

#### **⚠ WARNING**

Do not mix two brands of fluid. Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that is already in the reservoir are unidentified.

#### *Fluid Change*

Have the brake fluid changed by an authorized Kawasaki dealer.

#### **Front and Rear Brakes:**

Disc and disc pad wear is automatically compensated for and has no effect on the brake lever or pedal action. So there are no parts that require adjustment on the front and rear brakes.

#### **⚠ WARNING**

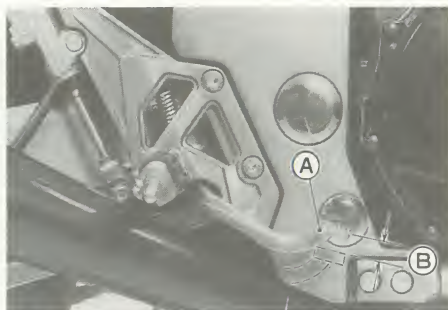
If the brake lever or pedal feels mushy when it is applied, there might be air in the brake lines or the brake may be defective. Since it is dangerous to operate the motorcycle under such conditions, have the brake checked immediately by an authorized Kawasaki dealer.

## Brake Light Switches

When either the front or rear brake is applied, the brake light goes on. The front brake light switch requires no adjustment, but the rear brake light switch should be adjusted in accordance with the Periodic Maintenance Chart.

### *Inspection*

- Turn on the ignition switch.
- The brake light should go on when the front brake is applied.
- If it does not, ask your authorized Kawasaki dealer to inspect the front brake light switch.
- Check the operation of the rear brake light switch by depressing the brake pedal. The brake light should go on after about 10 mm (0.4 in.) of pedal travel.



A. Brake Pedal

B. 10 mm (0.4 in.)

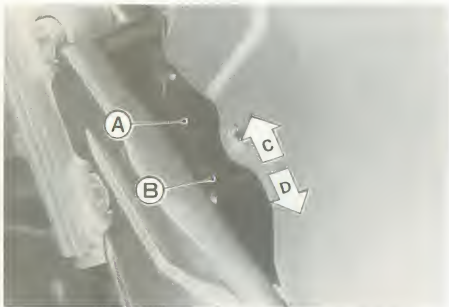
- If it does not, adjust the rear brake light switch.

### *Adjustment*

- To adjust the rear brake light switch move the switch up or down, by turning the adjusting nut.

## **⚠CAUTION**

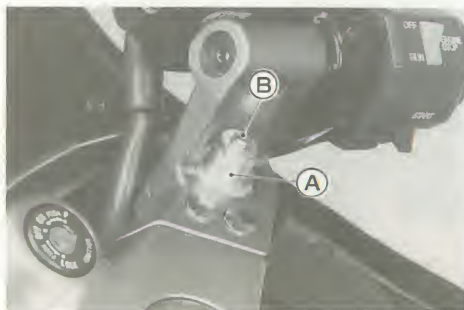
To avoid damaging the electrical connections inside the switch, be sure that the switch body does not turn during adjustment.



- A. Rear Brake Light Switch
- B. Adjusting Nut
- C. Lights sooner.
- D. Lights later.

## **Front Fork**

On top of each front fork leg are a spring preload adjuster and a rebound damping force adjuster so that the spring force and damping force can be adjusted for different riding and loading conditions. Weaker spring force and damping force are for comfortable riding, but they should be increased for high speed riding, or riding on rough roads.

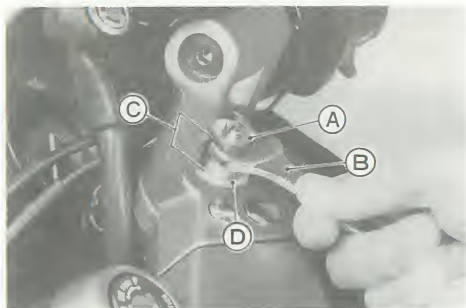


- A. Spring Preload Adjuster
- B. Rebound Damping Force Adjuster



### Spring Preload Adjustment

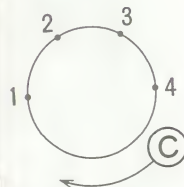
- Turn the spring preload adjusters into the front fork top bolt to increase spring force and out to decrease spring force using the wrench from the tool kit. Each adjuster has 8 adjustment marks. Be sure to position both adjusters to the same mark.



A. Spring Preload Adjuster    C. Marks  
B. Wrench    D. Top Bolt

### Rebound Damping Force Adjustment

- Use a screwdriver to turn the rebound damping force adjusters clockwise. Each adjuster has 4 adjustment clicks. Be sure to turn both adjusters by the same number of clicks.



A. Rebound Damping Force Adjuster  
B. Screwdriver  
C. Clockwise

Click Position	1	2	3	4
Damping Force	—————> Larger			



### **⚠ WARNING**

**If both spring preload adjusters and both rebound damping force adjusters are not adjusted equally, handling may be impaired and a hazardous condition may result.**

The standard setting position of the spring preload adjuster for an average-build rider of 68 kg (150 lb) with no passenger and no accessories is the 6th mark from the top, and that of the rebound damping force adjuster under the same conditions is the 2nd click.

## **Rear Shock Absorber**

The rear shock absorber can be adjusted by changing the spring preload and rebound damping force for various riding and loading conditions.

### *Spring Preload Adjustment*

The spring adjusting nut on the rear shock absorber can be adjusted for different road and loading conditions.

If the spring action feels too soft or too stiff, have it adjusted by an authorized Kawasaki dealer.

### *Rebound Damping Force Adjustment*

The rebound damping force adjuster at the lower end of the rear shock absorber has 4 positions so that the rebound damping force can be adjusted for different road and loading conditions. The numbers on the adjuster show the setting position.



**A. Cover**



**A. Rebound Damping Force Adjuster  
B. Number**

If the damping feels too soft or too stiff, adjust it in accordance with the following table:

Position	I	II	III	IIII
Damping Force	—————> Larger			

- Pull the plastic cover off the lower end of the shock absorber.

- Turn the adjuster rightward to the desired number until you feel a click.

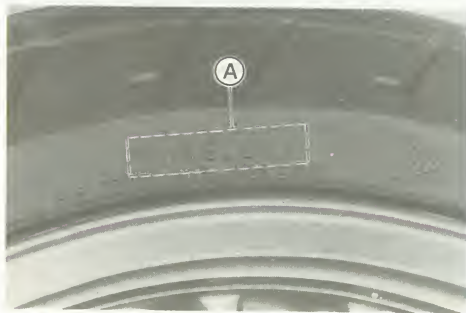
## NOTE

- *The damping force adjuster will turn in one direction only as indicated on it.*

The standard setting position of the adjuster for an average-build rider of 68 kg (150 lb) with no passenger and no accessories is No. II.

## Wheels

Tubeless tires are installed on the wheels of this motorcycle. The indications of TUBELESS on the tire side wall and the rim show that the tire and rim are specially designed for tubeless use.



A. TUBELESS Mark



**A. TUBELESS Mark**

The tire and rim form a leakproof unit by making airtight contacts at the tire chamfers and the rim flanges instead of using an inner tube.

## **⚠ WARNING**

The tires, rims, and air valves on this motorcycle are designed only for tubeless type wheels. The recommended standard tires, rims, and air valves must be used for replacement.

Do not install tube-type tires on tubeless rims. The beads may not seat properly on the rim causing tire deflation.

Do not install a tube inside a tubeless tire. Excessive heat build-up may damage the tube causing tire deflation.

## **Tires:**

### *Payload and Tire Pressure*

Failure to maintain proper inflation pressures or observe payload limits for your tires may adversely affect handling and performance of your motorcycle and can result in loss of control. The maximum recommended load in addition to vehicle weight is 183 kg (404 lb), in-

cluding rider, passenger, baggage, and accessories.

- Check the tire pressure often, using an accurate gauge.

## NOTE

- *Measure the tire pressure when the tires are cold (that is, when the motorcycle has not been ridden more than a mile during the past 3 hours).*
- *Tire pressure is affected by changes in ambient temperature and altitude, and so the tire pressure should be checked and adjusted when your riding involves wide variations in temperature or altitude.*



A. Tire Pressure Gauge

Tire Air Pressure (when cold)

Front and Rear	290 kPa (2.9 kg/cm <sup>2</sup> , 41 psi)
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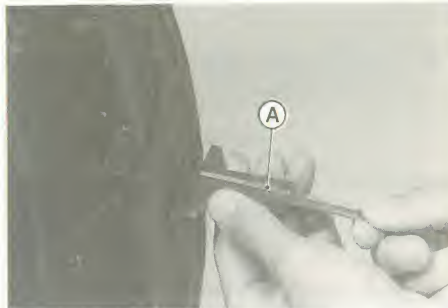
### *Tire Wear, Damage*

As the tire tread wears down, the tire becomes more susceptible to puncture and failure. An accepted estimate is that 90% of all tire failures occur during the last 10% of tread life (90% worn). So it is false economy and unsafe to use the tires until they are bald.

- In accordance with the Periodic Maintenance Chart, measure the depth of the tread with a depth gauge, and replace any tire that has worn down to the minimum allowable tread depth.

### Minimum Tread Depth

Front	_____	1 mm (0.04 in.)
Rear	Under 130 km/h (80 mph)	2mm (0.08 in.)
	Over 130 km/h (80 mph)	3 mm (0.12 in.)



A. Tire Depth Gauge

- Visually inspect the tire for cracks and cuts, replacing the tire in case of bad damage. Swelling or high spots indicate internal damage, requiring tire replacement.
- Remove any imbedded stones or other foreign particles from the tread.

## NOTE

- *Have the wheel balance inspected whenever a new tire is installed.*

### ⚠ WARNING

To ensure safe handling and stability, use only the recommended standard tires for replacement, inflated to the standard pressure.

Tires that have been punctured and repaired do not have the same capabilities as undamaged tires. Do not exceed 100 km/h (60 mph) within 24 hours after repair, and 180 km/h (110 mph) at any time after that.

## NOTE

- *When operating on public roadways, keep maximum speed under traffic law limits.*

## Standard Tire (Tubeless)

Front	<ul style="list-style-type: none"><li>○ 120/70VR17-V290 DUNLOP SPORT MAX or BRIDGESTONE CYROX-17</li><li>○ 120/70ZR17 PIRELLI MP7 SPORT, METZELER ME33 LASER, or MICHELINE A59X</li></ul>
Rear	<ul style="list-style-type: none"><li>○ 170/60VR17-V290 DUNLOP SPORT MAX or BRIDGESTONE CYROX-18</li><li>○ 170/60ZR17 PIRELLI MP7 SPORT, METZELER ME55, or MICHELINE M59X</li></ul>

### ⚠ WARNING

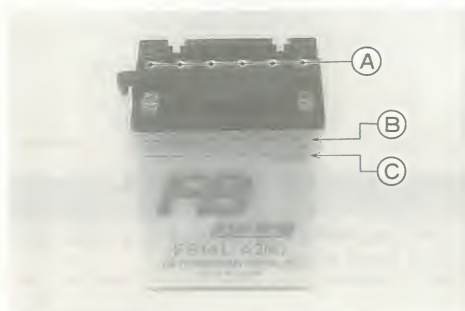
Use the same manufacturer's tires on both front and rear wheels.

## Battery

### Battery Electrolyte Level Inspection

The battery electrolyte level must be kept between the upper and lower level lines. Check the electrolyte level in each cell in accordance with the Periodic Maintenance Chart.

- Remove the battery from the motorcycle (see Battery Removal).
- Check that the electrolyte level in each cell is between the upper and lower level lines.



A. Filler Caps  
B. Upper Level Line

C. Lower Level Line

- If the electrolyte level is low in any cell, fill with distilled water as follows.
- Remove the battery filler caps and fill with distilled water until the electrolyte level in each cell reaches the upper level line.

### ⚠ CAUTION

**Add only distilled water to the battery. Ordinary tap water is not a substitute for distilled water and will shorten the life of the battery.**

### Battery Charging

- Remove the battery from the motorcycle (see Battery Removal).

### ⚠ CAUTION

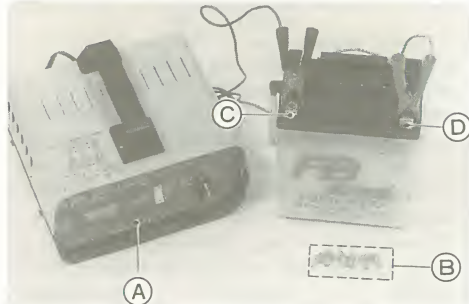
**Always remove the battery from the motorcycle for charging. If the battery is charged while still installed, battery electrolyte may spill and corrode the frame or other parts of the motorcycle.**



- Before charging, check the electrolyte level in each cell. If the electrolyte level is low in any cell, fill to above the lower level line but not up to the upper level line since the level rises during charging.
- Remove the caps from all the cells, and connect the battery charger leads to the battery terminals (red to +, black to -).

#### **⚠ WARNING**

Because the battery gives off an explosive gas mixture of hydrogen and oxygen, keep any sparks or open flame away from the battery during charging. When using a battery charger, connect the battery to the charger before turning on the charger. This procedure prevents sparks at the battery terminals which could ignite any battery gases.



**A. Battery Charger**

**B. Filler Caps**

**C. (-) Terminal**

**D. (+) Terminal**

- Charge the battery at a rate that is 1/10th of the battery capacity. For example, the charging rate for a 10Ah battery would be 1.0 ampere.

## ⚠ CAUTION

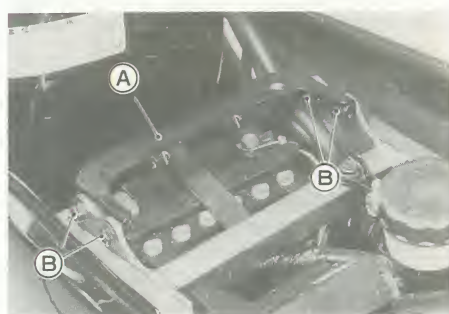
**Do not use a high rate battery charger, as is typically employed at automotive service stations, unless the charging rate can be reduced to the level required for motorcycle batteries. Charging the battery at a rate higher than specified may ruin the battery. Charging at a high rate causes excess heat which can warp the plates and cause internal shorting. Higher-than-normal charging rates also cause the plates to shed active material. Deposits will accumulate, and can cause internal shorting. If the temperature of the electrolyte rises above 45°C (115°F) during charging, reduce the charging rate to lower the temperature, and increase charging time proportionately.**

- After charging, check the electrolyte level in each cell. If the level has fallen, add distilled water to bring it back up to the upper level line.

- Install the caps on the cells.
- Install the battery.

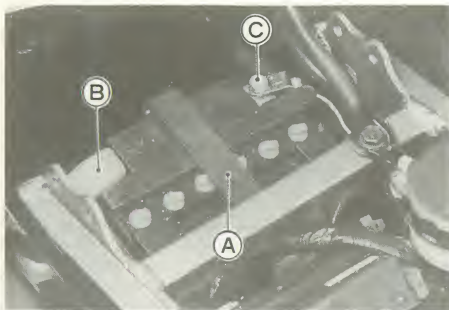
### *Battery Removal*

- Remove the seat.
- Remove the seat hook bracket.



A. Seat Hook Bracket    B. Bolts

- Unhook the rubber band.



**A. Rubber Band**

**C. (-) Terminal**

**B. (+) Terminal**

- Disconnect the leads from the battery, first from the (-) terminal and then the (+) terminal.
- Take the battery out of the case.
- Clean the battery using a solution of baking soda and water. Be sure that the lead connections are clean.

### *Battery Installation*

- Put the battery in the battery case, and route the battery vent hose as shown on the caution label.
- Connect the capped lead to the (+) terminal, and then connect the black lead to the (-) terminal.
- Put a light coat of grease on the terminals to prevent corrosion.
- Cover the (+) terminal with its protective cap.

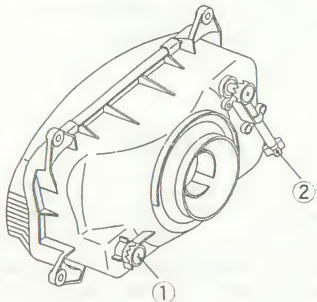
### **▲CAUTION**

**Make sure the battery vent hose is kept away from the drive system and exhaust system. Battery electrolyte can corrode and dangerously weaken the drive system. Do not let the vent hose become folded, pinched, or melted by the exhaust system. An unvented battery will not keep a charge and it may crack from built-up gas pressure.**

## Headlight Beam

### *Horizontal Adjustment*

The headlight beam is adjustable horizontally. If not properly adjusted horizontally, the beam will point to one side rather than straight ahead.



1. Horizontal Adjuster
2. Vertical Adjuster

- Turn the horizontal adjuster in or out until the beam points straight ahead.

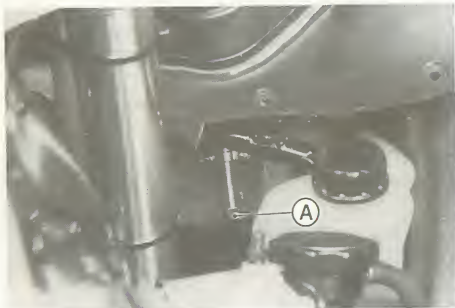


**A. Horizontal Adjuster**

### *Vertical Adjustment*

The headlight beam is adjustable vertically. If adjusted too low, neither low nor high beam will illuminate the road far enough ahead. If adjusted too high, the high beam will fail to illuminate the road close ahead, and the low beam will blind oncoming drivers.

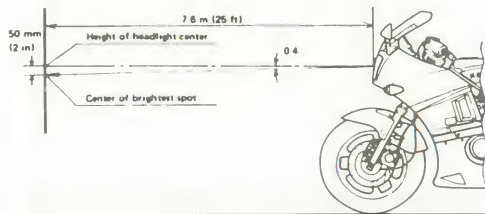
- Turn the vertical adjuster in or out to adjust the headlight vertically.



A. Vertical Adjuster

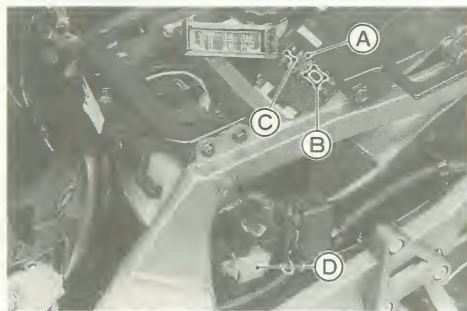
## NOTE

- On high beam, the brightest point should be slightly below horizontal. The proper angle is 0.4 degrees below horizontal. This is a 50 mm (2 in.) drop at 7.6 m (25 ft) measured from the center of the headlight, with the motorcycle on its wheels and the rider seated.



## Fuses

Fuses are arranged in the junction box located under the seat. The main fuse is mounted on the starter relay inside the left side cover. If a fuse fails during operation, inspect the electrical system to determine the cause, and then replace it with a new fuse of proper amperage.



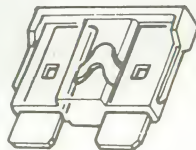
**A. Junction Box**  
**B. Fuses**

**C. Spare Fuses**  
**D. Main Fuse**

## ⚠ WARNING

**Do not use any substitute for the standard fuse.**

**Replace the blown fuse with a new one of the correct capacity as specified on the junction box.**



**Normal**



**Failed**

## Fuel System

Accumulation of moisture or sediment in the fuel system will restrict the flow of fuel and cause carburetor malfunction. The system should be checked and cleaned in accordance with the Periodic Maintenance Chart.

Inspection and cleaning should be done only by a competent mechanic following the instructions in the Service Manual.

## General Lubrication

Lubricate the points shown below, with either motor oil or regular grease, in accordance with the Periodic Maintenance Chart or whenever the vehicle has been operated under wet or rainy conditions.

Before lubricating each part, clean off any rusty spots with rust remover and wipe off any grease, oil, dirt, or grime.

### NOTE

○ *A few drops of oil are effective to keep bolts and nuts from rusting and sticking. This makes removal easier. Badly rusted nuts, bolts, etc., should be replaced with new ones.*

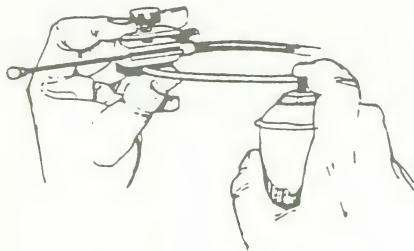


**Apply motor oil to the following pivots:**

- Side Stand
- Center Stand
- Clutch Lever
- Front Brake Lever
- Rear Brake Pedal

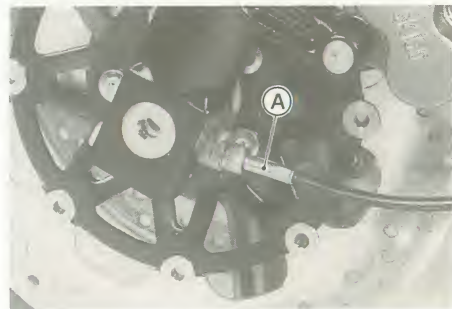
**Lubricate the following cables with a pressure cable luber:**

- Throttle Inner Cables



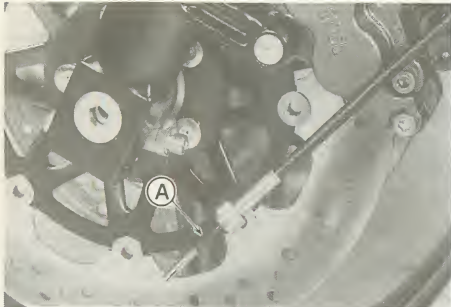
**Apply grease to the following points:**

- Throttle Inner Cable Upper Ends
- \* ○ Speedometer Inner Cable
- \* Grease the lower part of the inner cable sparingly.



**A. Speedometer Cable**

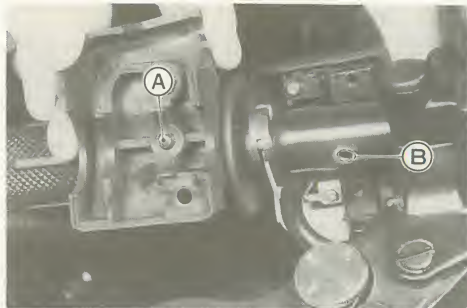




A. Grease

### NOTE

- After connecting the cables, adjust them.
- Making sure that the projection in the switch housing fits into the hole in the handlebar, assemble the switch housing. And after installing the switch housing, check the throttle grip play and adjust it if necessary.



A. Projection

B. Hole

- Insert the speedometer inner cable into the speedometer gear housing while turning the wheel so that the slot in the end of the cable will seat in the tongue of the speedometer pinion.

## Cleaning

For the prolonged life of your motorcycle, wash it down immediately after it has been splashed with seawater or exposed to the sea breeze; operated on rainy days, rough roads, or in dusty areas; or operated on roads on which salt has been scattered for ice removal.

### *Preparation for Washing*

Before washing, precautions must be taken to keep water off the following places:

- Rear opening of each muffler; Cover with plastic bags secured with rubber bands.
- Clutch and brake levers, switch housings on the handlebar; Cover with plastic bags.
- Ignition switch; Cover the keyhole with tape.
- Air cleaner intake; Close up the intake with tape, or stuff with rags.

### *Where to be Careful*

Avoid spraying water with any great force near the following places:

- Meter instruments
- Disc brake/clutch master cylinders and calipers
- Under the fuel tank; If water gets into the ignition coils or into the spark plug caps, the spark will jump through the water and be grounded out. When this happens, the motorcycle will not start and the affected parts must be wiped dry.
- Front and rear wheel hubs
- Steering pivot (steering stem head pipe)
- Uni-trak link pivots
- Swing arm pivot

## NOTE

○ *Coin operated, high pressure spray washers are not recommended. The water may be forced into bearings and other components causing eventual failure from rust and corrosion. Some*

*of the soaps which are highly alkaline leave a residue or cause spotting.*

#### *After Washing*

- Remove the plastic bags and tape, and clean the air cleaner intake.
- Lubricate the points listed in the General Lubrication section.
- Test the brakes before motorcycle operation.
- Start the engine and run it for 5 minutes.

#### **⚠ WARNING**

**Never wax or lubricate the brake discs. Loss of braking and an accident could result. Clean the discs with an oilless solvent such as trichloroethylene or acetone. Observe the solvent manufacturer's warnings.**

#### **Cleaning of Exhaust System:**

##### **⚠ CAUTION**

**To prevent surface damage, do not clean the exhaust system with chrome polishes or cleaners. Do not use waxes containing cleaners or abrasive cutting agents. Always use a soft cloth when washing and drying the system.**

#### *Washing*

The exhaust system must be cool before washing to prevent water spotting.

- Prepare a mixture of water and mild soap, such as dishwashing detergent. Do not use a high alkaline content soap as commonly found at commercial car washes because it leaves a residue.
- Wash the exhaust system with a soft cloth. Do not use an abrasive scouring pad or steel wool. They will damage the finish.
- Rinse the exhaust system thoroughly.

### *Drying*

- Dry the exhaust system completely with a soft cloth. Do not run the engine to dry the system or spotting will occur.

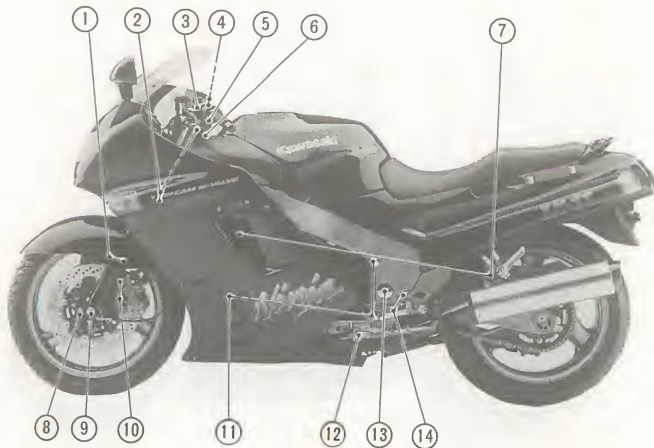
### *Protecting*

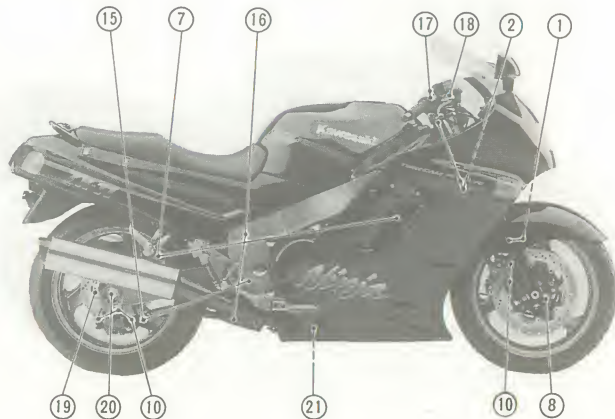
- When the system is dry, apply a light coat of WD40, LPS-1, or Bel-Ray 6-in-1 multipurpose oil.
- Wipe off the excess oil.
- The system can be waxed instead of oiled. Use a carnauba type paste wax only. Do not use waxes containing cleaners or abrasive cutting agents. They will damage the finish. Apply wax according to the manufacturer's instructions.

## Bolt and Nut Tightening

In accordance with the Periodic Maintenance Chart, it is very important to check the tightness of the bolts and nuts listed here. Also, check to see that each cotter pin is in place and in good condition. Please ask your authorized Kawasaki dealer for torque values.

1. Front Fender Mounting Bolts
2. Front Fork Clamp Bolts
3. Clutch Lever Pivot Bolt
4. Clutch Master Cylinder Clamp Bolts
5. Handlebar Mounting Bolt
6. Stem Head Nut
7. Muffler Mounting Bolts and Nuts
8. Front Axle Clamp Bolt
9. Front Axle Nut
10. Caliper Mounting Bolts
11. Engine Mounting Bolts and Nuts
12. Side Stand Bolt
13. Pivot Shaft Nut
14. Footpeg Mounting Bolts





- 15. Torque Link Nuts
- 16. Rear Shock Absorber Mounting Nuts
- 17. Brake Master Cylinder Clamp Bolts
- 18. Brake Lever Pivot Bolt
- 19. Chain Adjuster Clamp Bolt
- 20. Rear Axle Nut
- 21. Muffler Connecting Pipe Clamp Bolts



- Spray oil on all unpainted metal surfaces to prevent rusting. Avoid getting oil on rubber parts or in the brakes.
- Lubricate the drive chain and all the cables.
- Remove the battery, and store it where it will not be exposed to direct sunlight, moisture, or freezing temperatures. During storage it should be given a slow charge (one ampere or less) about once a month. Keep the battery well charged during cold weather so that the electrolyte does not freeze and crack open the battery. The more discharged the battery becomes, the more easily it freezes.
- Tie a plastic bag over the exhaust pipe to prevent moisture from entering.
- Put a cover over the motorcycle to keep dust and dirt from collecting on it.

#### **Preparation after Storage:**

- Check the electrolyte level in the battery, charge the battery if necessary, and install it in the motorcycle. Be careful that the battery vent hose is not pinched and that it is kept away from the driving system and other frame parts.
- Make sure the spark plugs are tight.
- Fill the fuel tank with fuel.
- Change the engine oil.
- Check all the points listed in the Daily Safety Checks section.
- Lubricate the points listed in the General Lubrication section.



## Engine Does Not Start:

### *Starter Motor Won't Turn*

- Engine stop switch off
- Clutch lever not pulled in and transmission not in neutral
- Fuse blown
- Battery leads do not make good electrical contact with battery terminals
- Battery discharged

### *Engine Cranks, But Won't Start*

- No fuel in tank
- Fuel line clogged
- Fuel broken down
- Choke is not used when engine is cold
- Engine flooded
- Spark plugs not in good contact
- Spark plugs fouled or wet
- Incorrect spark plug gap
- Incorrect valve clearance
- Battery discharged

## Engine Stalls:

### *Just When Shifting Into 1st Gear*

- Side stand has been left down
- Clutch does not properly disengage

### *While Riding*

- Choke is used too long after moving off
- Fuel tap is turned off
- No fuel in tank
- Fuel tank air vent is obstructed
- Overheating
- Battery discharged



In order to provide a permanent record, all warranty and service resolutions take place only through WRITTEN correspondence.

Please send your correspondence to:

CONSUMER RELATIONS  
KAWASAKI MOTORS CORP., U.S.A.  
P. O. Box 25252  
SANTA ANA, CA. 92799-5252

## »»»»»»»»»»»»»»»»»»»»»»»» REPORTING SAFETY DEFECTS ««««««««««««««««««««««««

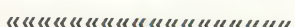
If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Kawasaki Motors Corporation, U.S.A.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Kawasaki Motors Corporation, U.S.A.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20590. You can also obtain other information about motor vehicle safety from the Hotline.

[illegible]

## MAINTENANCE RECORD



Vehicle Identification No. ....

Owner Name .....

Warranty Start Date .....

**Engine Displacement.....**

**Note:** Keep this information and a spare key in a secure location.

[illegible]

Date	Odometer Reading	Maintenance Performed	Dealer Name	Dealer Address

Date	Odometer Reading	Maintenance Performed	Dealer Name	Dealer Address

Date	Odometer Reading	Maintenance Performed	Dealer Name	Dealer Address





MEMO

04/13/11



**ZX1100-C2**

**KAWASAKI**  
**HEAVY INDUSTRIES, LTD.**

CONSUMER PRODUCTS & COMPONENTS GROUP

Part No. 99920-1527-02

Printed in Japan